

MOTOR AGE

Vol. IV. No. 24

DECEMBER 10, 1903

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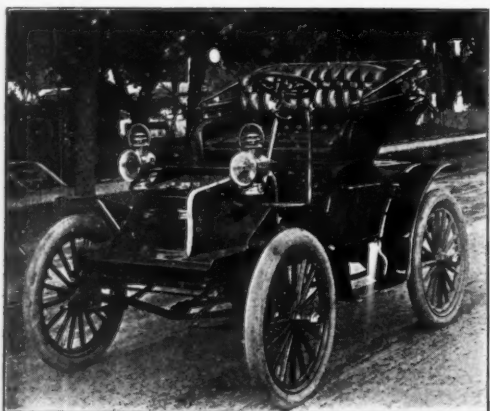
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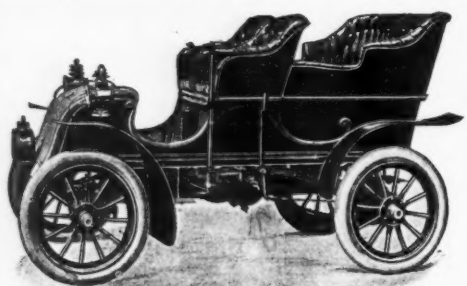
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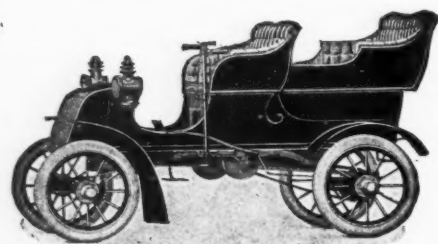
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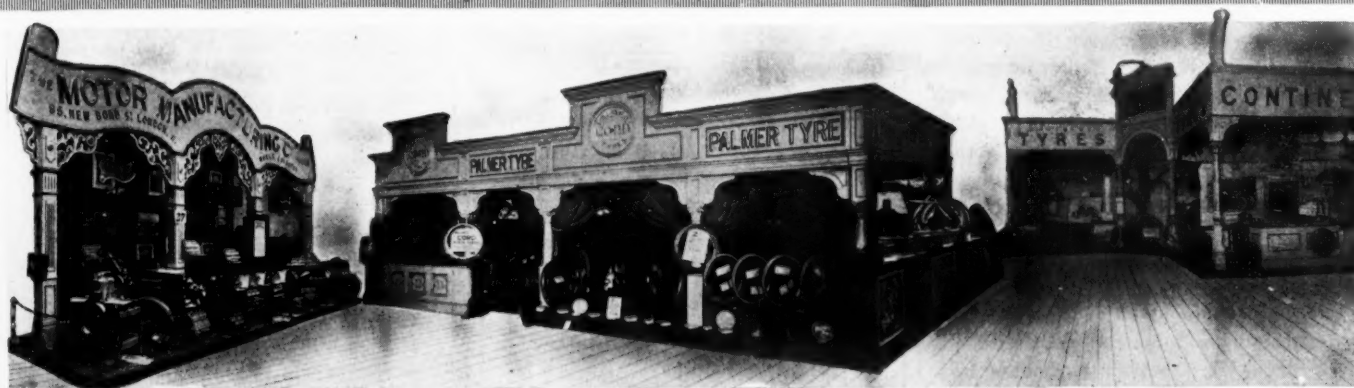
MOTOR AGE

VOL. IV. NO. 24.

DECEMBER 10, 1903.

\$2.00 Per Year.

MOTOR BICYCLES AT THE LONDON SHOWS

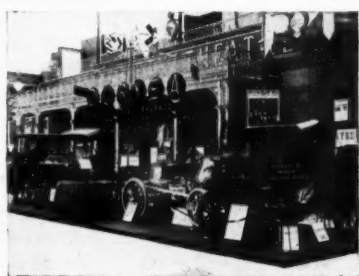


London, England, Nov. 28—On account of the scheduled automobile show of next January, the motor car makers were not called upon to support the National and Stanley cycle shows of the past week, as in years previously they have been accustomed to doing. Consequently at neither of these shows are there many motor car exhibits, those appearing being in most instances by firms making or selling both motor cycles and motor cars. At the Stanley show in Agricultural hall there were few motor cars, but it was a motor cycle exhibit supreme. Historic as a cycle show since 1878, this season it becomes in the industry a land mark in motor bicycle industry. At the National in Crystal Palace a greater number of motor cars were shown. At both shows were scores of small combination machines—half motor bicycle, half car—fore carriages with the passenger's seat in front or side carriages with the passenger's seat at the side. There is less value in considering the motor car phases of the shows than in considering the motor bicycles there, for the motor car show of the country is later. These are the biggest motor bicycle exhibitions ever held in England.

At the Stanley there were about ninety exhibitors of motor cycles, aside from the numerous concerns showing accessories and parts. At the National the number was smaller, there being about thirty exhibitors of motor cycles. A total of 120 distinct firms, most of them British, showing motor bicycles at one time, is a convincing demonstration of the

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Few Automobiles Displayed, but Over 120 Different Makes of Two-Wheelers Shown Greatest Exhibition of the Kind Ever Held

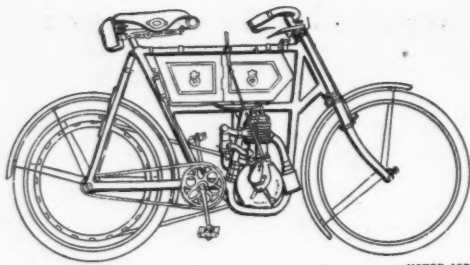


rapid spread of motor cycling and of the rapid growth of motor cycle making in Britain.

Without commenting upon the cars shown, on account of the previous hint of covering this field in the reporting of the big automobile show, the motor car exhibitors at these exhibitions were as follows: Beaufort Motor Co., Beaufort cars; John Marston, Sunbeam cars; Kyma Car Co., Kyma light car; British Automobile Commercial Syndicate, Talbot cars; The Duryea Co., British Duryea cars; A. Darraq & Co., Darraq cars; Friswells, Ltd., Peugeot cars; Vauxhall Iron Works, Vauxhall cars; General Motor Car Co., cars with Aster motors; Stephen Marples, Windora cars; Star Engineering Co., Star cars; H. E. Hall & Co., de Dion cars; Rex Motor Mfg. Co., Rex light car; Durkopp Co., Durkopp cars; Humber, Limited, Humber light car.

The motor bicycle displays show several decided tendencies in construction. One is toward spring forks, these being incorporated in the trussed fork, which is almost universal in England. Another and with less apparent desirability, is toward water cooling. It is probable that this will never become general on light machines, but several makers have adopted it on their regular motor bicycle models, while several others have employed it on heavier machines, intended to be fitted with a fore or side carriage.

Mechanical inlet valves are among the motor improvements, while magneto instead of batteries and induction coil is the prominent



The Abingdon

MOTOR AGE

novelty in the matter of ignition. In a few instances the free-wheel pedaling system for starting has been replaced by a friction driving clutch, by which the motor may be allowed to run free, the starting being accomplished by some sort of hand device, as in a motor car. Two speed gears are seen on several machines, and it is probable there will be a steady increase in their number. The surface carbureter is departing in favor of float feed spray carbureters of the Longuemare pattern.

Vertical motor disposition is the most popular, and even in cases of the inclined motor the hung-on construction is disappearing for construction in which the motor is either built into a specially designed frame or supported by a sort of cradle formed by the lower frame members.

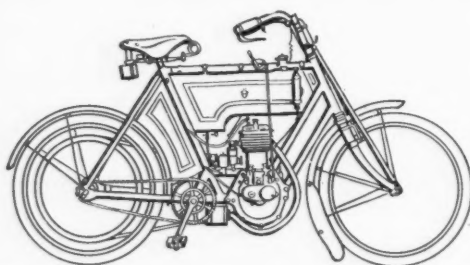
Every maker has a fore carriage, a side carriage or a trailer model. Good English roads permit the use of tricycles satisfactorily and it may be that this form of supplemented motor bicycle will furnish the cheap motor car, for which the public has clamored and about which the newspaper and magazine writers have flourished their pens.

The foot brake is either supplemented or replaced by a powerful hand brake, the rim variety being most common. Many machines have two brakes operated by the same lever, one brake on each wheel. One-lever emergency control is common. A favorite method of attaining this end is to so connect the controlling mediums with the brake hand lever that the manipulation of this lever breaks the ignition circuit, lifts the exhaust valve and applies the brakes simultaneously. Taken as a whole the English motor bicycles show the result of much careful study to perfect details and to render their operation more convenient and reliable than formerly.

Following are presented the chief characteristics of the most distinctive machines displayed at the two shows:

AT THE STANLEY

PHOENIX MOTORS, LTD.—The Phoenix is one of the oldest British motor bicycles. Many models are shown, the central one of which is the new $2\frac{3}{4}$ -horsepower machine with two-speed gear. In this gear the drive is direct on the high speed; in the intermediate position the clutch is of course entirely disengaged. It may be brought into engagement gradually to

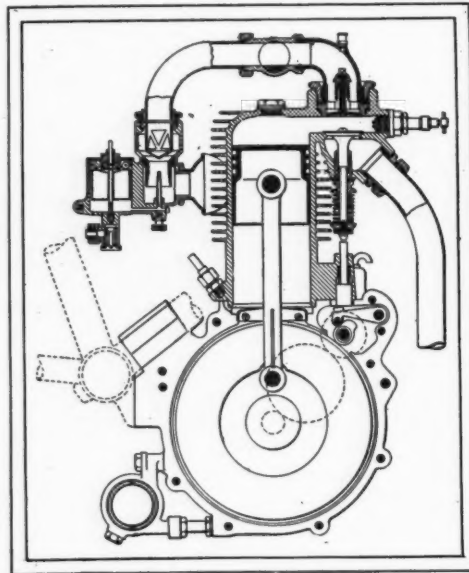


The Rover

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throw into driving action a planetary gear system through which the slow speed drive is obtained. The drive from the motor to the counter shaft is by chain, as it is also from the counter shaft to the rear wheel. Four patterns of "Trimco" with fore-carriage are made. The two-speed gear is included in these.

WERNER MOTORS, LTD.—Two and a half and 3-horsepower machines comprise the new Werner line and many changes in construction are noticeable, although the general form of the machine is similar to that of the prior model with the motor placed vertically in the fore frame. The combustion and valve chambers of the motor are cast integrally, but with an air space between and with radiating ribs around the valve chambers. The carbureter is placed within the tank with a small door to give access to it. The drive is by a V-section belt with expanding pulley to give a belt slipping free wheel effect. This device is operated from the handle bar. A spring backed pedal crank shaft division allows both pedals to hang down together under foot pressure, the intention being to afford a more comfortable position for riding. The spring returns the left crank to its normal pedaling position upon release of the

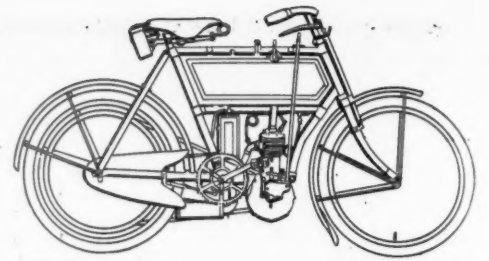


MOTOR AGE

F. N. Motor and Carureter

pressure. The motor is fitted with mechanically operated inlet valves. The chambers are in front instead of on one side of the cylinder to reduce the width. There is a speed regulator to automatically prevent the motor from racing when it is disconnected. This device is in the contact breaker case and governs the spark lead directly. Two hand controlled rim brakes, one for each wheel, are provided. The circuit breaker is combined with the brake lever.

MINERVA MOTORS, LTD.—This company, one of the most widely known of the makers of motors and complete motor sets for the production of motor bicycles, has three sizes of motors, each in two patterns, for inclined and for vertical position in the frame. The vertical position motor set includes a curved seat mast and an oppositely curved lower reach tube, between the ends of which the motor crank case is fastened. The motor continues with mechanically operated valves, which are said by this pioneer in their use on cycle motors, to give eminent satisfaction. The carbureter is a Longuemare pattern. The muffler includes a device whereby most of the final exhaust holes may be closed to reduce the noise at cost of increased back pressure. This attachment, of course, finds its utility in riding through



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The Ariel

crowded streets, etc. The ignition system has duplicate storage batteries with a two-way switch by which either may be thrown into service. The belt drive is retained, but a V-section has replaced the former twisted belt. The general construction is that of last year.

J. C. HENCKE—The characteristic feature of the Bichrone motor bicycle is the Bichrone motor, a two stroke engine with two V-disposed cylinders, only one of which is an impulse cylinder. This motor was described several months ago in *MOTOR AGE*. The fly wheel is on the outside of the crank case.

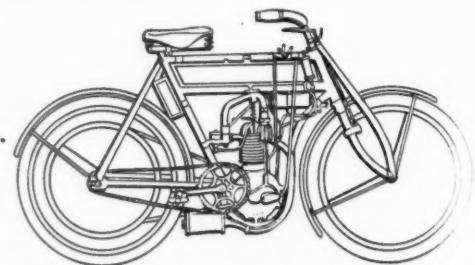
NOBLE MOTOR Co.—The Noble is another machine of established reputation, chief among the changes of whose motor is the adoption of mechanically operated inlet valves. The machine has a long wheel base with the motor set well forward in a vertical position. The big fuel tank case in the upper part of the frame contains the coil, batteries, lubricating oil tank, etc., so that the carbureter is the only motor appurtenance that is exposed.

SIMMS MFG. Co.—The distinction of the 1904 Simms Motor is a magneto dynamo used with an ordinary jump spark plug. The generator is driven by a chain from the cam shaft. On one end of the magneto is a spring interrupter, which is given its movement through a cam that may be rotated on the armature shaft. The movement of this cam furnishes the spark lead. The motor has a mechanically operated valve operated from above by a tappet lever.

FACELER MOTOR SYNDICATE—The Faceler is one of the lightest and one of the cleanest lined machines shown. The motor forms the seat mast something after the style of the Thomas, Indian and other American machines. The tread is extremely narrow. The drive is by chain from a sprocket on a counter shaft on the front side of the crank case to a large sprocket on the rear hub. The counter shaft is gear driven. The pedal crank shaft is independent of the motor, a separate chain connecting it to the rear wheel.

ENFIELD CYCLE Co.—The Royal Enfield this season has an air-cooled motor of customary construction instead of the water-cooled motor formerly used. Otherwise the machine presents little change except in details. The motor is vertical, in front of the pedal crank shaft hanger and drives by bevel gears and shaft, chainless bicycle fashion.

GRIFFON MOTORS, LTD.—Weighing but 110 pounds the newest Griffon is one of the lightest motor bicycles on the market. It has a $2\frac{3}{4}$ -



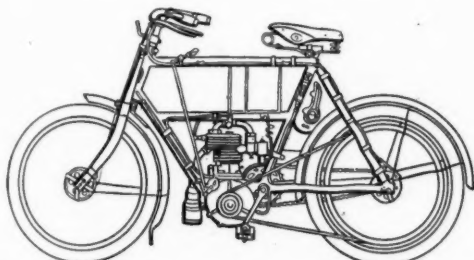
MOTOR AGE

The Auto

horsepower vertical motor not out of the ordinary, but for its mechanically operated inlet valves. The drive is to the rear wheel direct by belt, with independent chain drive for the pedal shaft. The chain adjustment is by an eccentric crank bracket that the rear wheel may be mounted rigidly.

IRIS MOTOR Co.—High power and water-cooling characterize the Iris. One of the prominent models has a 5-horsepower double-cylinder motor fitted with a friction driving clutch and a hand starting device. It is a two-wheeled automobile. The water tank has a small radiator on each side and it is said to carry sufficient water for 200 miles. Notwithstanding its extraordinary construction and equipment the machine weighs but 160 pounds.

BRADBURY BROS.—In the Bradbury Peerless the motor has the popular vertical position ahead of the pedal crank shaft hanger, but the usual construction for such an arrangement is departed from by attaching the crank case rigidly to the frame members. This is done by making the case an annular rim, with end plates, instead of in the usual two-part form. One of the most important features of the motor is the contact breaker. This is enclosed in a transparent dust proof case so that the operator may inspect the mechanism without exposing it. The ignition current is supplied by two storage batteries, each of which may be



MOTOR AGE The Vindec

switched into service. The company supplies a rear tandem seat for attachment to its regular model.

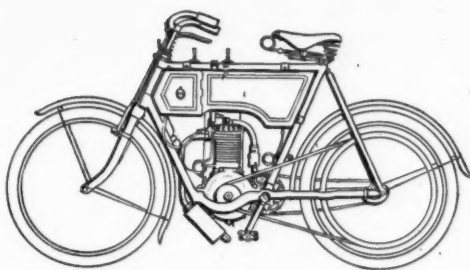
TERROT & Co.—This is a French machine. It is not of great novelty, one of the principal peculiarities being a window in the combustion chamber to allow the inspection of the sparking apparatus when operating.

MOTOR MFG. Co.—M. M. C. air-cooled bicycle motors in several sizes and patterns are supplemented by a 4-horsepower water-cooled model. Like the others its valves are on the front side of the cylinder. Another interesting model is a 2½-horsepower air-cooled motor with high tension magneto ignition. The magneto is driven by spur gears, the one on the cam shaft being of fiber.

G. STRAUSS & Co.—This concern, as agents, shows the Fafnir motor. The bicycle patterns are 2¼ and 3-horsepower air-cooled and 3-horsepower water-cooled. There is exhaust regulation on all. A complete Aix-la-Chapelle motor bicycle is shown with a 2½-horsepower motor.

SOCIETE ANONYME MECANIQUE ET MOTEURS—While it makes both styles, the water-cooled motor pattern of this concern attracts the most attention. In this, as in the air-cooled pattern, the motor is vertical. The combustion chamber and cylinder are cast integrally. The radiator comprises a V-shaped tube with square fins. It is placed in front of the steering head of the bicycle.

BROWN BROS.—Two, 2¾ and 3½-horsepower, sizes of Brown motor bicycles are made, the last being especially intended for use with a



MOTOR AGE The Alldays

fore-carriage. In all the motor fly wheels are exceptionally large, the bearings extremely wide and the crank cases air tight to be oil retaining. The two larger motors have mechanically operated inlet valves.

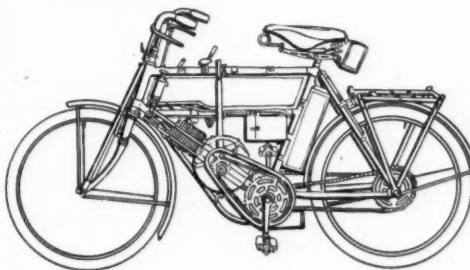
JEHU MOTOR Co.—Transmission is one of the most carefully worked-out elements on the Jehu. The system employed is elaborate, including a cone friction clutch on a counter shaft back of the engine and driven by a chain from the motor crank shaft. This clutch is operated by a lever on the handle bar. The final drive is by chain from the counter shaft, while a third chain connects the rear wheel through a free wheel clutch to the pedal crank shaft, which is carried by a hanger midway between the clutch counter shaft and the motor crank case. Another pattern has single, direct chain drive with the clutch in the sprocket on the motor shaft.

SOUTH BRITISH TRADING Co.—The Vindec Motor Bicycle is a typical English belt drive machine with F. N. motor. Equipment is more distinctive than construction, such features as brakes on both wheels and a hinged mud guard to facilitate tire repairing being prominent.

ALLDAYS & ONIONS—A double V-shaped cradle connecting the pedal crank hanger and the lower reach tube receives the motor of the Alldays machine in a vertical position and forms one of its most notable constructional features. Conveniences for the operator are plentiful. One is an indicator of the hand and dial style, which shows the amount of fuel in the tank. Another is a combination stand and rear mud guard, which, when let down to support the machine, exposes the tire for repair purposes.

ARIEL CYCLE & MOTOR Co.—While this company manufactures several patterns the 2¼ and 3¼-horsepower vertical motor patterns are the central features of the business. In the larger model the valves are on the back of the cylinder—an unusual position—and are driven by worm gearing. The contact breaker is enclosed in a glass case. There is a cut-out on the muffler. The appurtenances are contained within the fuel tank box. The two sets of batteries are held by spring clamps, while the coil is attached to the hinged door of the compartment. The lubricating oil tank and pump are also contained in the main tank case.

ELSWICK CYCLE & MFG. Co.—While its regular 2-horsepower pattern is unusual in no sense this company has a large novelty in its 4-horsepower double-cylinder pattern. The cylinders



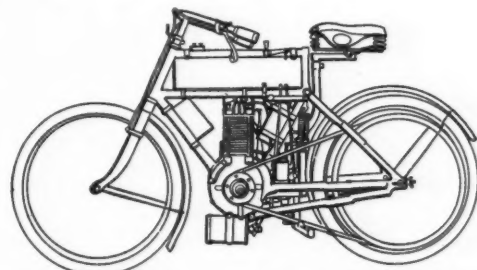
MOTOR AGE The Humber

are inclined at an angle of 90 degrees and the F. N. carbureter feeding both is midway between the two, the whole arrangement being much like that of the American Hercules. One or both cylinders may be operated as desired, the intention being to save fuel during easy running, while at the same time having a possible total of power for the heaviest work.

BORD MOTOR Co.—The specialty of this company is a small motor set whereby an ordinary bicycle may be converted into a motor bicycle. The motor is fitted with an outside fly wheel and is to be fitted vertically in the middle of the front frame. The drive is by twisted belt, either with or without idler for adjustment. The set provides for carrying the gasoline tank in front of the handle bar. The spray carbureter is fed through a flexible metallic tube.

HORART, BIRD & Co.—Both the vertical and inclined positions of the motor are used by these makers. In the adoption of the former the popular yoked lower reach tube, into whose bend or loop the motor crank case may be set, is used. An emergency handle bar control is notable. This provides that the movement of one lever breaks the electric ignition circuit, lifts the exhaust valve and applies the rear wheel brake.

THE CLYDE CYCLE & MOTOR Co.—This is another concern using magneto ignition. Differently from the most of the others following



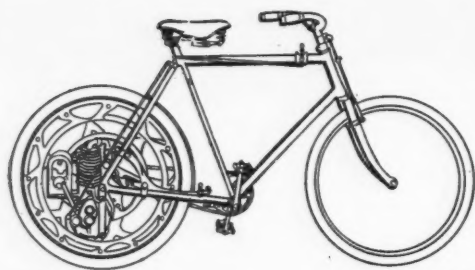
MOTOR AGE The Spring Frame Bat

this practice, however, it uses the low instead of the high tension system. The magneto is placed directly back of the vertical motor. The three main control levers are all pivoted on one shaft but are so separated by washers that the movement of each does not effect the position of any other.

J. L. THOMAS—There is no particular constructional peculiarity in the Thomas, it being a conventional machine made up from a Minerva motor set. In the trussed spring front fork lies the principal "talking point." The main fork is of the regular trussed variety, but instead of receiving the wheel hub it takes one end of an L-shaped fork, at whose corner the hub is carried and at whose crown over the wheel is a coil spring connecting it elastically with the main fork crown.

IMPERIAL CYCLE & MOTOR Co.—The frame is the most notable feature of the Imperial. Running forward from the bottom of the seat mast is a semi-circular motor cradle of T-section steel. Connected to the forward end of this loop is the regular lower reach tube. The remainder of the frame is conventional with middle horizontal reach tube extending from near the lower end of the steering head to the seat mast, where it is met by a supplementary pair of rear stays. The vertical motor and its equipment is up-to-date and includes such features as automatic valve lifter, acting when the spark lead lever is thrown back to the point of greatest retardation.

A. C. DAVISON—The Davison has a freak frame with an assembled effect of the motor



MOTOR AGE

The Buckley

being put on as an afterthought. The lower reach tube runs to a point on the seat mast slightly below the middle and from the same point extra rear stays extend backward. The seat mast continues downward to meet the forward end of the lower rear fork. This leaves an open corner in the frame into which is set a vertical motor held fast by cylinder head and crank case connections respectively joining the lower reach and the seat mast. The drive is by belt. The motor ignition is by low tension magneto. The upper quadrant of the frame is completely filled by a tank case containing the fuel and lubricating oil reservoirs.

KING & Co.—The King is a big, stout machine, with 2¾-horsepower motor set vertically in front of the crank hanger much in the manner of the mounting of that of the Noble. Both air and water-cooled motors are supplied, all being M. M. C. motors.

CRYPTO WORKS Co.—Triangular or cross tube framing is carried to the limit in several of the Crypto patterns. The machines have vertical motors in sizes ranging from 2½ to 3½ horsepower. In the smaller sizes V-section belt drive is employed, while on the largest pattern a 1½-inch flat belt is used.

ORMONDE MOTOR Co.—The 1904 Ormonde is "nifty" to say the least. A clean lined, large crank cased motor is set vertically in a loop formed by extending the seat mast down and curving it around to form the lower reach, the juncture of curve and straight lines being tangential in both instances. The designing is such that the motor cylinder is exactly in the center of the front frame. The motor is low down while the entire frame is not as high as in most machines. Three and 3½-horsepower motors, with mechanically operated inlet valves, are used. The transmission is direct through a chain-belt. This consists of flat steel blocks, lined with leather, and with steel rollers on projecting lugs. The rollers engage toothed flanges on the motor pulley. The rear pulley is a plain flat pulley.

HUMBER, LTD.—The various Humber patterns remain characterized by the inclined motor, held by four lower reach tubes. One model, however, has an additional feature in the way of a driving clutch. This is of the cone variety and is on the motor shaft. The drive is then by chain to the pedal crank shaft, from which two chains run to the rear wheel, one for the motor drive and the other for the pedal free wheel drive. The Coventry Humber tandem has a water-cooled motor, with the water tank on the head, and with radiators projecting from the sides of the tank.

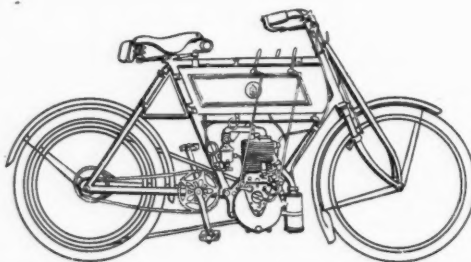
W. R. McTAGGART—Mr. McTaggart is the representative of the F. N. motor bicycles and motors. There is little novelty in the complete machine. The motor, however, is distinctive in design and among the most carefully evolved of all bicycle motors. The accompanying sectional illustration gives a good idea of its construction and of the construction and attachment of the F. N. carbureter.

CHARLES BINKS—This builder seeks to

create two-wheeled automobiles. He uses four-cylinder air-cooled motors. In one machine these are set longitudinally; in another transversely. In either case the drive is by chain from a counter shaft. All the shafts run on ball bearings and all the valves are mechanically operated. One set of batteries is carried, but there are four coils. There is a friction clutch, but no hand starting device, it being necessary to take a hop-step-and-jump to start the machine.

TRIUMPH CYCLE Co.—Neat and light vertical motor construction characterize the Triumph. The machine is the height of conventionality in form but its detail has been carefully wrought. An instance of this is a lead lined gasoline tank which is acid proof. In the Triumph fore-carriage a water-cooled motor is used.

ROVER CYCLE Co.—The most prominent model has a 3-horsepower motor placed vertically in front of the bottom bracket in the usual cradle. Distinctiveness is attained, however, by the use of twin lower reach tubes—two parallel tubes about 4 inches apart. The motor has a large fly wheel and crank case and its cylinder differs from the ordinary in that the air-cooling ribs do not extend further down from the head than the approximate bottom of the combustion chamber. The valves are



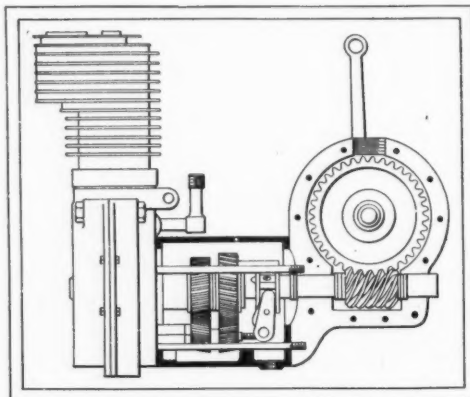
MOTOR AGE

The Triumph

mechanically operated. A novel commutator is one of the especial features. The ignition system also includes the popular double set of storage batteries. The construction is more careful than on many machines and the finish is extraordinarily good.

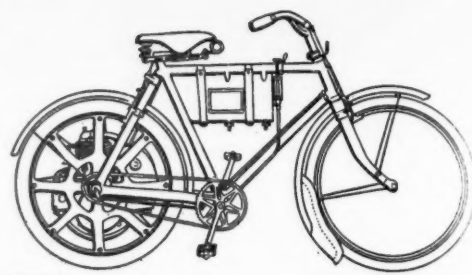
J. A. PRESTWICK & Co.—In the newest form of J. A. P. motors, which are fitted to several standard motor bicycles, both the inlet and exhaust valves are on top of the cylinder, being operated from overhead. The plug is also in the head. This construction is used to secure better cooling.

WHITELY MOTOR Co.—The air-cooled motors of this concern range in size to 4-horsepower. They are not radical. The inlet valve is atmospherically operated and is in a chamber directly above the exhaust valve. The plug is also in the head, although clear across the cylinder from the valve. While in this position it does



MOTOR AGE

The Starley Transmission



MOTOR AGE

The Singer

not receive the cleaning sweep of the incoming charge, neither does it get the full benefit of the fouling exhaust. On one pattern there are air scoops for throwing a current of air against the cylinder head.

GARRARD MFG. Co.—All of the Clement-Garrard models are interesting, especially the light weight Paris-Rome pattern and the 3-horsepower machine. This has a double-cylinder motor suspended vertically about midway of the lower reach tube. The cylinders, instead of being at a wide angle to each other, as customarily in such construction, are as nearly parallel as it is possible to make them. The outside fly wheel usual on Clements is used. This, as well as other models, has a new spring fork. A feature of all Clement-Garrard machines is a handle bar control with an indicator in the center of the bars and a flexible shaft inside the bar tube. Suitable connections are made between this shaft and the indicator and between it and the spark advance. The positions for different speeds are shown on the indicator.

EAST LONDON RUBBER Co.—A lady's model is prominent in the line of Kerry motor bicycles. The motor is inclined slightly forward in a tubular cradle formed by the curved lower reach tube. The head formation is similar to that of a man's machine frame, but at the point where the upper reach has extended sufficiently backward to encompass a small tank, a thrust tube is inserted between it and the lower reach and the upper tube takes a sharp angle to curve downward for the purpose of providing skirt room.

THE ABINGDON WORKS Co.—This company offers one of the most complete lines of parts of one shop's production. One of the most striking of these factors is a belt driven rear axle differential for motor tricycles. It is constructed to allow belt removal for pedal propulsion in case of motor failure. One of the Abingdon motor frames assembled into a complete machine is illustrated. It is not handsome, but ought to be rigid. It will take almost any motor and allows easy motor removal.

W. H. HALLIWELL—The Aurora is one of the most compact of the vertical motor machines. Its general construction is similar to that of the Ormonde, except that the lower reach tube is ogee curved to shorten the wheel base. The valves are in front of the cylinder with the atmospherically operated inlet valve above and in line with the exhaust. Direct belt drive is employed. The usual custom of a big tank case to enclose appurtenances, as well as reservoirs, is not followed, the batteries and coil being "hung on" American fashion.

AT THE NATIONAL

BUCKLEY PATENT MOTOR WHEEL AND CARRIAGE Co.—The Buckley is the sole rival of the Singer in the tractor wheel line. Its motor is hung in the disk spoked rear wheel vertically like the Singer, but the construction differs to provide a through rear axle. The drive is from a spur pinion on the motor crank shaft to an internal gear on the rear wheel. One side of

the wheel is left open to render the motor accessible. A front wheel driver in which a light Minerva motor is hung on the frame work is also shown.

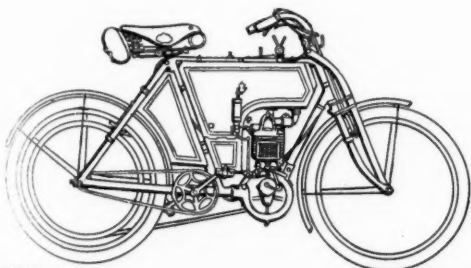
STARLEYS, LTD.—The Starley, monument to the late James Starley, founder of the bicycle industry, is in a class of its own, having such a distinguishing feature as a worm-gear drive furnishing two speeds, a free engine and a free wheel. It is at least ingenious. The motor is placed vertically ahead of the pedal crank shaft hanger, with its crank shaft longitudinally of the machine. Back of the crank case is an extension case in which is the two speed gear. The final drive, through a worm, is to a worm gear on the counter, which is also the pedal crank shaft. A single chain furnishes the final drive. The free wheel device for pedals is of course on the counter shaft. A second free wheel clutch is placed in the rear hub to disengage the motor if desired. The speed changes are effected by ordinarily operated sliding gears. One of the small features of the Starley is a sliding stand incorporated in the rear frame and which may be readily let down to support the machine.

RALEIGH CYCLE Co.—The 3-horsepower motor of the new Raleigh machine is fitted with a governor, which permits of a wide range of manual control through it, but which is said to delicately govern the speed of the motor to correspond with running conditions. Another infrequently found feature is a spring or elastic chain drive. This is accomplished by a spring clutch drive from the motor shaft to a counter shaft, from whence the final drive is direct. The other Raleigh models include a water-cooled machine with fore-carriage in which there is a driving clutch and motor starting handle, pedals being obviated.

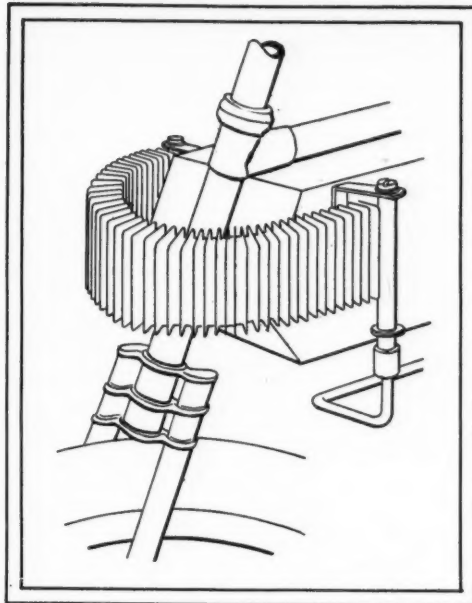
FRANK H. PARKYN—The Olympic no longer has the Minerva motor, one of Mr. Parkyn's own construction having been substituted in the six models of this season. One of the most apparent novelties is the placing of the batteries and induction coil in a polished wooden box hung on the rear stays.

THE CENTAUR CYCLE Co.—The Centaur has the usual vertical motor built rigidly into the frame; that is, its crank case forms the connection between the pedal crank shaft bracket and the lower reach tube. This tube forms one of the novelties of the machine, as it is enlarged and used to comprise the muffler. The drive is by triple chain—first to the pedal crank shaft and then by two chains to the rear wheel, one chain being the motor and the other the free-wheel pedal drive. The front fork is rigid, but an "anti-vibration" steering head in which a rubber buffer is placed on the crown, is used. The chain drive system includes a friction clutch to prevent jerks in transmission, and consequent chain breakage.

QUADRANT CYCLE Co.—A coil spring supported front fork and a make and break system of ignition are the leading features of the several Quadrant models. The motor, with the



The Rex

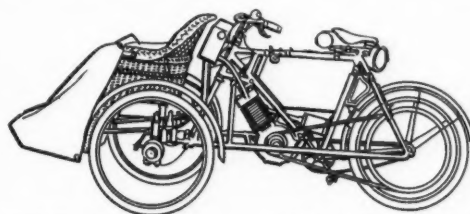


Radiator on Societe Mecanique Machine

addition of an exhaust valve lifter, is the same as last year and the company is one of the remaining advocates of the surface carbureter. Tricycles and fore-carriage models are prominent in the line.

WILLIAM P. BROUGH—As English agent, Mr. Brough shows the Marsh, American motor bicycle. It is the only wood-rimmed motor bicycle at the show.

PITCHER & BARTLETT—This firm's exhibit is chiefly interesting in its motor tandem with drop rear frame for a lady. This construction of the frame is like that of the prevailing form of lady-back tandem bicycle, the motor being placed vertically between the two pedal crank



Excelsior Fore-Carriage

hangers and thus in a position which avoids encumbering either the front or the rear frame.

ACME MOTOR Co.—Several models, ranging from the small machine with motor slung obliquely under the lower reach tube to a big, fast machine with vertical motor in a looped front frame, are shown. In this model a 4½-horsepower motor is used, one of the largest single-cylinder, air-cooled motors at the show. The general construction is usual.

SINGER & Co.—Of course the leading member of the Singer family of models is the one with the motor in the rear wheel. This has been readily adapted to the new fore-carriage pattern, its peculiar construction permitting its adaptability to such use with less of frame complication than is necessary in ordinary practice. In one of the fore-carriage models a convertible machine is effected by making the forward structure readily interchangeable with an ordinary steering wheel. The motor wheel construction is much the same as last year. One of the motor bicycles has a new chain drive in which the power is taken from the motor on the open side of the wheel, to the pedal crank shaft and then delivered back to the wheel on the other side. In still another pattern the rear wheel enclosed motor is replaced by an ordinary vertical motor in the

front frame. This is a belt driven machine and its most distinctive feature is magneto ignition.

REX MOTOR MFG. Co.—One of the most peculiar of the several peculiarities of the Rex is an enlarged exhaust valve chamber on the side of the motor cylinder and into which the exhaust passes directly. It issues through a series of baffle plates which are supposed to reduce it to atmospheric pressure. This directly attached muffler is said to be a good silencer with little appreciable back pressure. Except at the port this chamber is separated by a slight air space from the cylinder wall, that there may be a free circulation of air around the cylinder. The firm sticks to the surface carbureter but has made the tank so as to provide greater vaporizing surface than formerly.

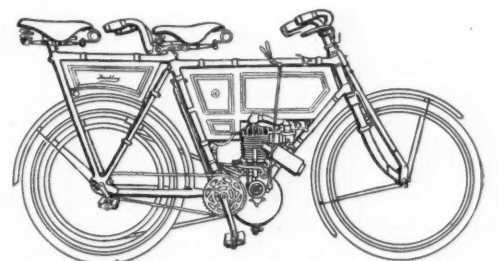
BAYLISS THOMAS & Co.—This company builds its motors under patent privilege from the de Dion-Bouton company and they are substantially de Dion motors. A 3-horsepower air-cooled motor is used on the principal Excelsior model and this is equipped with either a surface or spray carbureter, at the option of the customer. Special attention has been paid to the braking system, which is extraordinarily powerful. Several forms of "trimos" and fore-carriages are shown.

BAT MOTOR MFG. Co.—This is one of the largest exhibits at the show, twenty-four machines being shown. The spring frame, which was introduced about a year ago, and which has become commonly associated with the name Bat, is retained in several of the standard road models. There is also a rigid frame racer with vertical motor in front. While the other models have mechanical valves, this has automatic valves and the new Bat carbureter in place of the Longuemare, previously used. The spring frame model has somewhat stiffer frame staying than formerly, and a new hand rim brake as well as a foot brake. There are no pedals or pedal chain or any of the Bats, which are simply provided with foot rests similar to those used on strictly racing motor cycles. Several patterns of tricycles and a convenient side carriage model are shown.

KYNOCH, LTD.—This company is new to the business, but has produced a compact machine with several distinctive minor features. The motor is obliquely disposed on the lower reach. Its most notable characteristic is an inlet valve release or opener to assist starting.

OTHER MACHINES

The motor bicycles exhibited at both shows, but not above described, may be broadly divided into two classes—those assembled from standard sets, such as the M. M. C., Minerva, F. N., etc., and those which are not of striking originality either in general design or construction of detail. Most of these are well made machines, built on generally approved lines and without the tentatively advanced novelties characterizing the machines of bolder manufacturers. In a few, however, are interesting minor novelties.



The Bradbury Peerless Tandem

MOTOR AGE

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WILL WE BE IN IT?

Are our motor car makers and our amateur enthusiasts intending to stay out of the Gordon Bennett international cup race, or have they surprised up their respective sleeves to spring at the last minute?

The prescribed limit for entries is almost at hand—December 15—and the Automobile Club of America, up to the hour of going to press, had received no entries.

This is not a life and death matter, but America should be represented in this great race, even at the chance of being beaten. We were beaten last year. To stay out this year when the race will be twice as great as that of last summer means that the other nations will jump at conclusions—it is easy enough to guess what kind.

MOTOR AGE has previously expressed its own opinion upon the value of participating in this race. It is not necessary to discuss the point again. Perhaps others, the makers particularly, think differently and do not believe it worth while to engage in such pursuits.

This may be a correct view of the matter, but if it be the prevailing view it were a pity it were not discovered so soon after we had gone into the game with a flourish only to be beaten badly.

CLUB USEFULNESS

Occasionally the leading spirits of an automobile club are heard to complain that the members do not take enough interest in the affairs of the club, that it is difficult work to get them to frequent the club house or to attend meetings. This represents a peculiar condition.

Automobile clubs have a purpose—definite and plain. Anything with a purpose may be made a success. It should be possible to create interest in club members. In most cases this cannot be done by the common method of seeking to interest the selfishness of the member. He cannot be offered a whole lot of direct personal gain immediately.

If the club is in a city large enough to support a club house, it is in the midst of a community of other and older club interests. These detract from the desire to frequent the club house for the sake of obtaining the club facilities. Also, if the meetings and entertainments of the club are purely of a social nature the club will here find competition with which it cannot well cope.

To really secure an interest in its affairs on the part of its members the club must appeal to the motoring spirit of its members and point out to them the many ways in which the club can better automobiling conditions if it once has the prestige and assistance of sufficient membership to carry on effective work. In other words, the member must be made to understand that his co-operation is necessary to the work of the club—a far different way of appealing to him than by telling him what he is missing by staying away.

There are so many avenues of work, in all of which the club is assured of outside co-operation that it is hard to imagine that a few good hustlers in any club could not by ceaseless effort bring the other members to see the importance of their help.

In all works of legislation, good roads and streets, sign boards, etc., the club is assured of a general interest in its campaigns and needs only to stand as the central figure—the prime booster of the community in which this work is carried on—to direct the work and see that it does not lag.

There are many ways in which to point out to members and prospective members the general advantage of co-operative work along these practical lines. During the winter months several easily carried-out methods present themselves. One is to establish at regular intervals open-house evenings, to which all automobilists, club members or not, are invited. These events may be of the semi-vau-deville variety, but it is not good policy to make black-face songs the center of interest, for then those in attendance will soon come to think of the proceedings as simply mediums to cheaply obtained fun.

Each meeting should present some serious topic for discussion. Discussion is here the right word, for mere addresses will never stimulate the interest that may be aroused when topics are so presented that those attending will individually wish to comment upon them. Discussion breeds interest, and interest is the whole necessity of the club. It is better to have interested members wrangling over policies of procedure than to have uninterested members peacefully staying away from the club and out of its work.

Such meetings continued with unbroken regularity during the winter months ought by all reason to be the means of largely increasing the membership, of convincing new members of the importance of their active participation in club affairs, and of tonicing old members up to the same degree of enthusiasm.

The success of the automobile school of the Boston Y. M. C. A. furnishes what an Englishman would call a delightful hint. Let a club establish a course of elementary tech-

nical discourses upon subjects of automobile construction, care and operation, and invite to them all the automobilists of the city. Let these be illustrated with lantern slides if possible and let every effort be made to keep up the attendance at the first few sessions. It will support itself after that. This course would naturally lead to the discussion of other serious phases of automobiling and by the coming of summer there might have been created a widespread interest in the more useful lines of motoring endeavor and in the club as the community's focus of this endeavor.

The clubs can afford to spend a little money during the winter along such lines. It will surely be found to pay itself back, and, if not, is better spent than when devoted to festivity.

MODIFIED NUMBERING

The strenuous objections made by the British motorists against the regulations regarding numbers have resulted in some modifications that will be far more satisfactory to the users of numbers.

The last revision of the rules permits the index letter to be placed either above or in a row with the number. The plate must be rectangular with a black background and white letters and figures. The letters and figures must be $3\frac{1}{2}$ inches high, every part being $\frac{5}{8}$ -inch broad, and the total width of the space taken by every letter or figure except in the case of the letter I and the figure 1, must be $2\frac{1}{2}$ inches. The spaces between the letters and figures must be $\frac{1}{2}$ -inch, the margin between the rearest part of any letter or figure and the top or bottom of the plate at least $\frac{1}{2}$ -inch, and between the sides of the plate 1 inch.

The plates shall be fixed one on the front and one on the back of the car in an upright position, so that the inscriptions on them will be upright and easily distinguishable. Designs painted or otherwise shown upon the motor car may be used, if desired, instead of attached plates.

Only the number on the back of the car must be illuminated at night. In the case of motor cycles either the front or back plate may be illuminated.

EXPORTS STILL INCREASING

While there was a slight decline in the value of the exports of automobiles and parts in October as compared with that of October a year ago, the figures being \$119,131 and \$122,624, respectively, this decline was more than made up in the ten months' totals, which aggregated \$1,311,960. A glance at the official figures as compiled by the treasury experts, shows that our foreign trade in automobiles is growing at a rate that is most gratifying. During the ten months ending October, 1901, the value of our exports was \$262,537, increasing to \$970,610 during that same period of last year, and passing the million dollar mark during the ten months of this year.

LIGHT AMERICAN CARS LIKED

Official advices received in Washington state that notwithstanding the strenuous endeavors of the English, French, and German automobile manufacturers to obtain the supremacy of the market, it is pleasing to note that American automobiles can be seen running about the city of Bradford, England. That portion of England in which Bradford is situated is very hilly, and light cars of about 5-horsepower, which, owing to their reasonable price, have found favor, are well spoken of and give satisfaction. A larger volume of business in this line is looked for next year.

A Reminder That

THREE YEARS AGO THIS WEEK

Washington opened its first annual local automobile show.

TWO YEARS AGO THIS WEEK

The French automobile show opened in the Grand Palais, Paris.

ONE YEAR AGO THIS WEEK

The Automobile Club of America made formal entry for the 1903 Gordon Bennett cup race.

OUTLOOK DISCOURAGING

No Evidence of Entries for America's Gordon Bennett Race Team—Time Expires This Week—Clubmen Divided on the Question of Allowing Professional Drivers

New York Dec. 3—Up to the meeting of the racing committee of the Automobile Clubs of America, which was held today, no official intimation of any intending entries for an American team in the international cup race had been received. The entries for the team close on the fifteenth, so that makers have a chance yet to see to the representation of this country in the great event.

While the Winton Motor Carriage Co. made inquiry for a set of the Gordon Bennett rules inference of its intention to enter the elimination trials can hardly be assumed. At this writing Barney Oldfield is reported to be on his way east. Barney's ambition to compete in the big foreign races is well known, but it is far from certain that the company will go so far as to ask that he be made its representative in the Gordon-Bennett contest. It seems more probable that he may be permitted to go abroad for a try at the straight-away record and incidental participation in any of the open races that may be promoted. In fact, the whole matter awaits the result of Oldfield's conference with Mr. Winton.

Harry S. Harkness, in a talk with a MOTOR AGE man today left the impression that he would require a lot of persuading to induce him to enter the elimination trials, though he expressed the greatest confidence in his present machine, whose private trials abroad convinced its owner of its great speed. He hinted at a desire to build two more cars, but seemed to be laboring under the impression that Selden patent requirements would interfere with such a move. On the whole, he seemed much more interested as to the particulars of the Florida course and trials than in any Gordon Bennett team attempt.

The committee had received no reply to its letter to the German club as to its alleged proposal to change the rules so as to permit of professionals driving the cars of members of challenging clubs and no word either from its foreign representative, Clarence Gray Dinsmore, who was requested to keep the club informed of all important matters in reference to the race. It is probable that the German club and Mr. Dinsmore will be cabled in time for a reply before the closing of the entries on December 15.

The policy of the new committee—Osborn W. Bright, Dave H. Morris and George Isham Scott—is to express no more academic opinions on the situation, but rather to await the news of the fate of the German club's alleged proposition and the actual request of an American maker to be represented by a professional. There is also an alleged resolve on the part of the committee to sanction no American team being endorsed by the club that is not representative and likely to bring credit to its nominators and the United States.

At the conclusion of the meeting the secretary was instructed to issue the following conditions of entry, which are exactly the same as those of last year:

All entries from the United States are required to be made through the Automobile Club of America, and will be received up to December 15.

The Automobile Club of America is open to receive entries for the cup race upon the following conditions:

1—Each entrant shall deposit with this club the sum of \$600.

2—The racing committee of this club shall decide which of the entrants may compete in the cup race. This decision may be arrived at by a contest, or by the committee without a contest.

3—Any entrant who is not nominated by the racing committee for the cup race shall have his entrance fee returned to him.

4—Any entrant who after being nominated for the cup race by the committee does not start shall forfeit his entrance fee of \$600.

5—If three entrants are nominated to take part in the cup race, each entrant shall have two-thirds of his entrance fee—after deducting his proportion of the expenses incurred in holding the race—returned to him, provided he starts in the race.

6—If two entrants are nominated, each of such entrants shall have one-half of his entrance fee—after deducting his proportion of the expenses incurred in holding the race—returned to him, provided he starts in the race.

7—These rules are supplemental to the rules of the Gordon Bennett cup race by which each entrant agrees to abide.

RULES TO BE CHANGED

New York, Dec. 7—It is probable that the rules of the Gordon Bennett race will be changed in two important particulars at a meeting of the international committee to be held in Paris December 15. This news comes in a letter from the German club in response to a communication from the A. C. A., asking for particulars as to an alleged proposal by the former to change rule 9 so as to admit of owners nominating professional drivers. This change, says the Berlin letter, will be considered, and also a proposition to change rule 11, referring to the minimum length of the course, to conform to the Saalsburg circuit chosen. It is not intended to materially alter the total length of the race, but merely to change the rules to admit of the use of the course chosen.

Clarence Gray Dinsmore, of the A. C. A., will attend the meeting and cable its outcome. December 15 is also the date of the closing of the entries for the American team elimination trials. Secretary Butler says that, of course, the closing of the entries for the American team will now be postponed a day or two until information of changed conditions is received, which may affect the intentions of our makers to nominate cars for the trials. Mr. Butler says Alexander Winton and Louis P. Mooers, who have made inquiries as to the proposed changes in the rules, will be notified that they will be informed of the action of the committee as soon as news of it comes by cable. The chances for American representation in the race now seem brighter. The proposed change in the rules may influence other makers besides Winton and Mooers to make entries.

DIVISION OF OPINION

New York, Dec. 8—There is a split of opinion in the board of governors and the racing committee, and naturally among the members of the Automobile Club of America, over the question of favoring or opposing the German amendment permitting owners to name professionals to drive their cars in the international race and over making our cracks eligible by election to membership in the event of the German proposition failing at next Thursday's meeting of the international

race committee in Paris. The governors say they must cable instructions to Mr. Dinsmore, the A. C. A. representative, and are seeking the opinion of the members in the matter.

President Scarritt in a recent MOTOR AGE interview advanced the broad, democratic idea to be expected from a man of his liberal calibre that it is nothing against a man to be able to drive a car faster than others and to make money from his skill. He favored making our cracks eligible by election to membership, setting up as the sole qualifications that their conduct be gentlemanly and that they bear a reputation for honorable dealing among their fellows. Chairman Bright, of the racing committee, favors professional drivers for members' cars.

George Isham Scott and Dave Herman Morris, of the committee, though are said to advance the extreme idea that the donor of the cup intended that the race should be for "gentleman drivers," and that the club should insist on the retention of the pure amateur idea.

The opinion of the trade and outside fraternity is, of course, unanimous, that having accepted international representative responsibilities the club is in honor bound to forget for the moment the social side of its existence and place no bar to creditable American representation. Under the changed conditions of the present the proposition to put gentleman riders at the wheel against the professionals and trade experts that for the most part compose the British, German and French teams, is regarded as laughably childish in its ingenuousness. There is a large contingent of the club that takes this sensible view of the matter. Which side will prevail will be decided at a meeting of the governors next Friday. There is really little hope of an American team anyhow, in view of recent developments. If there be none through any social prejudice of the A. C. A. there will be a demand that some really representative national body assume responsibility in the matter of these international contests.

TO BUILD GREAT SPEEDWAY

Los Angeles, Cal., Dec. 3—Now that the mile record for automobiles is held here it is the ambition of the members of the Automobile Club of Southern California to build the finest automobile road in the world, so that California will be the Mecca for automobilists from all over the world.

A tour of inspection was made last week by a number of the members of the club over a route that has been proposed. This route leads from the extension of Washington street to a point 7½ miles from Playa del Rey. The exact boundaries have not been made public, but already 3 miles of private right-of-way have been promised free to the club by outsiders.

The speedway would cost about \$40,000 and would go over a plain that drops but 15 feet in the straight course to Playa del Rey. Here it would intersect the proposed shore line boulevard intended to connect all the beaches from Santa Monica to Redondo.

The right of way will be 100 feet wide, although the roadbed will be but 30 feet wide at first. The surface will be made smooth with decomposed granite, oiled down, and while the road will be open to all automobiles, it will probably be so arranged that it can be closed during rains and until the surface may become hardened before it is used again.

NEXT YEAR'S GORDON BENNETT CUP RACE



Starting and Finishing Point, Saalburg



Dangerous Corner Between Esch and Koenigstein

While the country through which the 1904 Gordon Bennett cup race route passes is described as picturesque, it is not probable that the contestants will devote much of their time and attention to gazing at the beauties of nature. The matter of negotiating the frequent turns will occupy their minds most of the time.

A map of the course and a brief description was published in *MOTOR AGE* of last week. The starting and finishing point will be at the castle of Saalburg, from which place it is said the German emperor will see the race.

Since the route was chosen by the German Automobile Club and the emperor sanctioned it, several motorists have driven over the course to discover its good and bad points.

Starting from Saalburg the road for some distance is on a magnificent level, and, being straight, permits fast going. Shortly before reaching the village of Grafenwiesbach there is one of the worst turns of the course, which will necessitate slow traveling to avoid accident. The turn into the village is at a right angle, with a sharp ascent of about 10 per cent, and this will test the racers. From this village the road continues about the same—long, straight, level and wide enough for two cars to drive abreast and pass at full racing speed.

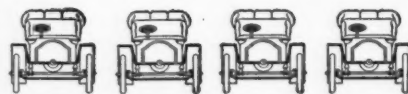


The Descent in the Road Just After the Start From Saalburg



MOTOR AGE

Fine Road Near Oberursel



At the end of each stretch the turn is rather short or there is a sharp descent, but the excellent surface of the road makes it comparatively safe. There are practically no rough stretches along the route, except in places which will likely be neutralized.

Between Weilburg and Limburg is perhaps the best portion of the route. This stretch is about 12 miles long, and here the best time will undoubtedly be made. Going out of Weilburg the grade is stiff, but the road is wide and straight.

The entry to Limburg is through an old gateway and over a paved stone bridge, making a picturesque view.

From Oberursel to the castle of Saalburg the width of the road is not great, and although it is quite level there are a number of twists and turns.

Henri Fournier says of the course, that, as a whole, it is a first-class road, but it will severely tax the drivers and the cars. He thinks it is far superior to the Irish course, but qualifies this statement by saying it is possible there may be some accidents. He thinks there are as many twists as there were in the Paris-Vienna route, but that all things considered, it is not possible to find a better course.

Continuing, Fournier says: "Excepting in



Castle at Limburg



The Bridge at Limburg

COURSE COMBINES ALL HIGHWAY CONDITIONS



The First Bad Turn Out of Saalburg

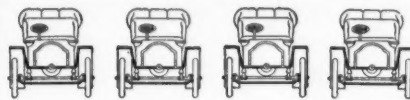


Worst Turn on Course—Near Kirberg

a few places, the route is about the same width as some of the best roads in France. The roadbed is granite and there will not be much dust in the summer. Even under inclement weather conditions, with rain, snow and thick mud, we were able to run over it at 50 miles an hour without any accidents except a single slip. The road would be an ideal one were it not for the numerous turns. On many of these turns which often have a fairly steep grade, it will be necessary for the driver to keep his eyes wide open and take the turns slowly in order to finish without accident. It will also necessitate a good car, which will have to be fitted with foot brakes and a motor that will start quickly. Durability of the car must be considered, as well as speed."

The problems presented by the course meet the approval of Herr Fritz Opel, of the Opel bicycle and motor works at Russelheim, who, in expressing his views, said: "If the course were perfectly level, any amateur could steer. What we want is a test of all-round work, and this can be obtained on the proposed course. It contains the usual difficulties to be met with on any good road."

The neighborhood of the course will provide ample accommodation for visitors. Frankfort will care for 20,000 guests, while Homburg and Donaldshausen will find room for several



A Straight Stretch Running Into Limburg, Showing the Rolling Ground Over Which the Course Passes



MOTOR AGE

Approaching Esch

thousand more. Other towns along the route will easily handle the remaining spectators. It is estimated that about \$30,000 will be required to pay the expenses, and this can be raised without difficulty. Homburg has already contributed \$1,000 and the inn-keepers of the same town have pledged the same amount. Frankfort will give largely and the other towns along the route have agreed to help raise the necessary amount.

The Automobile Club of Germany anticipates no trouble in raising the whole amount, as most of its members are wealthy.

FLORIDA POSSIBILITIES

W. K. Vanderbilt, Jr., has entered the Ormond-Daytona beach races and will have his 30-horsepower Mors and his 90-horsepower Mercedes cars there. Rene de Knyff says it will be very unlikely that he will take part in the Florida races, although he may be there as a spectator. Last summer's Gordon Bennett race in Ireland is now understood to be his final try at racing. He does not care for personal advertisement, only going into a big race for the benefit of his firm.

Charles Jarrott, of London, England, hopes to be a competitor in the Florida races, and if he comes will drive a new de Dietrich, which is now building.



A Sharp Turn in Weilburg



Hill Leading Into Weilburg

GOLD MEDALS TO EIGHT

Endurance Run Final Awards Given to Six Different Makers By the National Association

When the National Association of Automobile Manufacturers awarded eight gold medals to as many participants in the great New York-Pittsburg endurance contest the last act was performed and the curtain dropped, but the memory of the event will always endure. The judging committee had previously suspended the rules and had given first class certificates to all cars which finished at Pittsburg, but it was obvious that some had, whether through fortune or otherwise, made a better showing than others and were entitled to some form of recognition. Had the rules not been suspended the eight cars receiving gold medals would have been the only ones recognized, inasmuch as these alone reported at each control within the time specified in the rules. The White, with its two entries, received two medals; the Pierce two for its only two entries and the Packard and Stearns each one with a single entry. It must be recalled that the Packard was the same machine, "Old Pacific," that had made the coast to coast trip, finishing only a short time before it was started in the endurance run, so that the maker and the driver, Tom Fetch, naturally had some reason to feel proud.

There were days when some of the gold-medal cars reached the control even before the pilot cars, which it will be remembered, made a most successful run from start to finish and had the difficult task of finding the way and picking the road.

Going over the history of the run shows that some of the cars receiving gold medals did not sail along as if on a boulevard—there were side-slips, light collisions and other minor mishaps, but each was at the control before the official closing time.

Those awarded gold medals were: Webb Jay, operator of White, No. 5; Paul H. Deming, operator of White, No. 6; Percy P. Pierce, operator of Pierce, No. 15; C. L. Sheppy, operator of Arrow, No. 14; B. B. Holcomb, operator of Columbia, No. 2; Frank B. Stearns, operator of Stearns, No. 35; E. Tom Fetch, operator of Packard, No. 16; George Soules, operator of Toledo, No. 10.

JEFFREY PROTESTS

The announcement of gold medal awards has brought a strenuous protest from Thomas B. Jeffery & Co., of Kenosha, Wis., who say that the giving of a gold medal to Columbia No. 2 is unfair unless Rambler No. 18 be given the same treatment. The following extracts from a letter from the company to the N. A. A. M., a copy of which was handed to Motor Age, explain the Kenosha company's position:

We believe the following facts are admitted—that Columbia No. 2 and Rambler No. 18 failed to get into the garage at Buffalo before midnight, October 10, and that the Columbia reached Buffalo in the afternoon, but skidded against a curb and broke an axle. It is claimed that an official told Mr. Holcomb, the operator, that it was unnecessary for him to be towed to the garage, and he consequently remained where the accident happened, being afterwards towed to the garage, arriving at 1:42 a. m.

Rambler No. 18 met with an accident in going down a hill toward a bridge near Avon. In this case, also, the machine skidded and struck a post, demolishing the rear wheel. A new wheel was telephoned for and brought from Rochester, put on the carriage, and the carriage arrived at the Iroquois hotel, Buffalo, the same night under its

own power—after having gone 7 or 8 miles on a wrong road owing to the absence of confetti—Mr. Gardiner remaining at the hotel for about an hour conversing with Messrs. S. A. Miles, F. J. Wagner, M. L. Downs and others, and reporting at the official garage at 1:25 a. m., being the eighth to arrive there, Columbia No. 2 not having yet reported.

We fail to see why the Columbia should receive a gold medal and not the Rambler. It is admitted that each carriage made all previous and subsequent controls on schedule time; that each carriage had an unavoidable accident from the same cause, side slipping; that the Rambler arrived at the official garage at 1:25 a. m. and the Columbia at 1:42 a. m.; that the Rambler came in under its own power, and that the Columbia did not.

It is assumed that previous to this, and for the remainder of the run, the records of both carriages being perfect, there was no choice between them, and that any preference would hinge upon their arrival at the garage, at which both were late.

If degrees of delay govern the decision, then the Rambler would unquestionably have preference over the Columbia. If the score were for a perfect run, the Rambler would again receive the preference, since it made every inch of its journey under its own power; the Columbia did not.

There may be, of course, some reasons that caused your committee to give the Columbia a gold medal and to ignore the Rambler, but it would seem that these reasons should be published that those interested may fully appreciate either the fairness or the injustice of the award. We shall be glad in any case to know wherein the Columbia excelled the Rambler and merited the gold medal to the exclusion of the Rambler.

THE CITY IS GENEROUS

Chicago, Dec. 8—An ordinance has been introduced in the Chicago council amending the present automobile ordinance so that next year the number plate for cars will be furnished by the city. The license fee will remain the same as at present. There will be no charge for the number plate. The new plate will be made of tin, painted black with raised white figures 5 inches high and 1¾ inches wide. The figures, 1904, will be placed before the first figure of the number in smaller type, to designate the year.

"The plate must be fastened in a substantial way upon the car," said City Electrician Ellicott, and as there is a hole in each corner that will admit a six-penny nail, it is presumed that the plate will be either nailed or screwed onto the back of the car.

There have been 1,899 licenses issued so far this year. One man skipped a few numbers and got 1904 to be in line next year.

Charles W. Gray and Charles H. Tucker have been appointed officials at the Ormond-Daytona race meet. Mr. Gray will take his Peerless and Winton cars with him to Florida and compete in the touring car races. President John Farson, of the Chicago Automobile Club, and Frank X. Mudd will also attend the meet.

The entertainment committee of the Chicago Automobile Club has arranged to give a smoker on Thursday evening, December 17, at the club house as the first of its series of winter evening entertainments. The evening will be enlivened by vocal and instrumental music. The members of the club have been asked to bring their friends, and all interested in automobiling are invited to be present.

The Chicago Automobile Club has reappointed Sydney S. Gorham as its attorney for the coming year. Mr. Gorham, who is also attorney for the Electric Vehicle Co., has recently formed a partnership with Luther Laffin Mills and Matthew Mills. The firm expects to devote considerable attention to automobile legislation and is making a special study of the laws pertaining to the use and abuse of the automobile.

FORM BAY STATE LEAGUE

Leading Clubs Decide Upon State Association and Will Affiliate With the A. A. A.

Boston, Dec. 4—Steps looking toward the formation of a Massachusetts Automobile Association, to be affiliated with the American Automobile Association, were taken at a meeting of the representatives of seven of the leading automobile clubs of this state, held at the Hotel Touraine yesterday afternoon. President Julian A. Chase and Secretary C. H. Gillette, of the latter organization, came to Boston during the day in order to meet these representatives and talk over matter relating to the proposed association. At the conference there were present President James T. Soutter, of the Massachusetts Automobile Club; Vice-President W. E. Eldredge, of the Boston Automobile Dealers' Association; President Asa Goddard and Secretary H. E. Shiland, of the Worcester Automobile Club; President Frank Weston, of the Berkshire Automobile Club; Mr. Burke, of the Marlboro Club, W. H. Marble, of the Brockton Association, and L. H. Greenwood, of the Fitchburg Club, telephoned that his organization was in sympathy with the movement.

President Chase reviewed the history of the A. A. A. and the work it has to perform in the automobile world in order to bring into closer union the diverse interests of the operators and owners of the horseless carriage. Secretary Gillette made an outline of the association which is proposed to be affiliated with the national body. The organized clubs of Massachusetts had been invited to take some action in the matter and in addition to those represented in person the North Shore Club, as well as the clubs of Springfield, New Bedford, Salem, Lowell and Warren had all been heard from and were in full sympathy with the movement. The clubs were invited to perfect such an organization, elect officers of the division, and assign the work of advancing the automobile interests in the state to this organization. The membership fee, it was thought, should be equally divided between the national and state organizations, whereas under the present condition the national body receives the entire fee. This will give the local divisions funds with which to carry on the work of spreading the gospel of good roads, the promulgation of literature which may tend towards securing favorable legislation, and the recruiting of members. It is also proposed to bring about a system of reciprocity of club touring privileges between the members of the organization having membership in the proposed league.

Each delegate expressed himself as pleased with the idea, but desired to report back to his club and secure the necessary authority to act. It was determined that such should be the case, and that Secretary Gillette should forward to each representative a draft of the proposed constitution and by-laws, and then after action had been taken on the same by the club the final action relative to the formation of a Massachusetts Automobile Association should be taken at a meeting to be held at the Touraine two weeks hence.

NEW YORK SEEKS GOOD ROADS

Syracuse, N. Y., Dec. 8—The Onondaga board of supervisors has received a communication from State Engineer Bond, urging them to send three or more delegates to the fifth annual

meeting of the supervisors' state highway convention, which will be held in Albany January 26 and 27. Last winter the convention had a representation from fifty-one counties. Mr. Bond referred to the recommendation that the laws be amended so as to permit the state to raise funds to pay for its half of the costs of highway improvement under the Armstrong-Higbee law. One of the affairs of the convention will be to secure the passage of a resolution in the legislature submitting to a vote the question whether \$50,000,000 shall be raised by the issue of bonds to take care of the state's share of the cost. The county of Onondaga will be represented at that meeting and every effort will be made to improve the roads in this section.

NEW CORBIN CAR READY

American Hardware Co. Prepared for Big Output Next Season—Hartford Trade

Hartford, Conn., Dec. 7—Work on the new Corbin car is progressing at the Russell & Erwin factory of the American Hardware Co. in New Britain. This is the car which F. N. Manross evolved and which was known as the Bristol. It was secured by the hardware concern and from it Jones, formerly with the Knox company of Springfield, has developed a two-cylinder car, double chain driven, with tonneau, and other features which should make it popular next season. The price has not been fixed, but it is believed it will be about \$1,700. The test car has been sent over the roads in Hartford county and has been found successful. Work is now in progress on a car for the New York show. With the resources of the hardware trust, which now employs several thousand workmen in New Britain, it is believed the car can be put on the market in large numbers in a short time.

The Electric Vehicle Co. is at work on a two-cylinder car of about 16-horsepower and it is anticipated this car will be offered for about \$2,000. The big new four-cylinder car which the company will market for next season, and which is now being tried out, will be an advance upon the present form of the Columbia touring car.

If negotiations now in progress carry S. A. Miner will have one of the finest garages in the east. The plot of ground adjoining his present station, fronting Ailyn and Church streets, covering an area 700 square feet and owned by the Bidwell estate, is said to be the location of the station Miner plans erecting. Heretofore the Miner station has catered only to the steam and gasoline trade, but with the new station it is expected he will supply all garage wants.

The demand upon the Dart Palace station has been so great that a second building of the same large size will be added early in the spring, allowing storage for a hundred vehicles. The air is full of rumors of another large station to be built in the center of the city, and of still another to be located in the residence section of Hartford known as "Lord's hill."

L. H. Elmer, the Hartford bicycle race promoter, has received a letter from Major Taylor, who is now in Australia riding under contract, telling that he is to give up bicycle riding for the automobile and that he aspires to be a racing chauffeur. As soon as he returns from Australia he is to take up the new work. Taylor was never partial to motors until his last season of racing in France. He bought a car and used it when his racing dates permitted.

TO RUN SHOW JOINTLY

Buffalo Dealers' Association Will Affiliate With Club in Promotion of the Local Exhibition

Buffalo, N. Y., Dec. 7—The Buffalo automobile show next spring will be held under the auspices of the Buffalo Automobile Club, and will be conducted jointly by the club and the Buffalo Automobile Dealers' Association.

The last show, which was also the first in Buffalo, was conducted by W. C. Jaynes and F. J. Wagner, and these two gentlemen agreed with each other to conduct the 1904 show, and had jointly engaged the hall with this object in view. Later Mr. Wagner donated his interests in the coming show to the automobile club, and Mr. Jaynes assigned his interests verbally to the dealers' association.

For a time it looked as though there might be two shows. Then the two bodies agreed to consolidate. The announcement of the consolidation was hailed with a great deal of satisfaction by all interested, as it was a foregone conclusion that with two shows, neither would be a success.

The following committee of five selected from the two organizations will conduct the show: W. H. Hotchkiss, president of the automobile club; Charles Clifton, treasurer of the automobile club; E. R. Thomas, member of the club board of governors and president of the dealers' association; John Gibson, dealers' association, and Dai H. Lewis, secretary of the dealers' association. Each member has had considerable experience in promoting such affairs and local automobilists in general are looking forward to a good show. No announcement of the date has yet been made, but it is quite probable that this will be decided upon some time this week.

Buffalonians, automobilists and otherwise, are much pleased over the honor bestowed upon the club president, W. H. Hotchkiss, in being elected president of the New York State Automobile Association. The board of governors of the Buffalo Automobile Club held a meeting last Saturday and elected A. H. Knoll as a representative of the club in the New York State Automobile Association. A new membership committee was appointed as follows: F. J. Wagner, chairman; George Robinson, J. B. Eccleston, A. H. Knoll, J. A. Cramer, E. F. Hall and H. E. Crouch. The membership is now over 350 and the new committee will aim to make the total over 600 before the snow flies in the fall of 1904. Chairman Wagner is one of the chief hustlers of the club, is largely responsible for the present large membership and may be presumed to be fixed with some scheme or other for securing the desired 250 new members.

The Buffalo Automobile Dealers' Association held a special meeting at the Genesee hall Saturday afternoon. A committee, consisting of Dai H. Lewis, John Gibson and Leroy Pelletier, was appointed to draw up a constitution and by-laws, and a committee composed of Dai H. Lewis, H. C. Wilcox and C. W. Roe was appointed on membership. The whole of the local automobile trade has signified its intention of joining the association and it is therefore bound to be as strong as any local trade organization in the country.

Owners of electric carriages are having no end of trouble, caused through mischievous youngsters jumping in the cars and running them to their satisfaction and then leaving

them after stealing lamps, laprobes and bells. Numerous complaints have of late been made to the police. The courts blame the police and the police say the offenders are allowed to go when arraigned. Unless something is done immediately to stop the trouble the Automobile Club will take it up and insist upon officials doing their duty.

GOOD SEASON IN WASHINGTON

Trade Constantly Growing, With Bright Outlook for 1904—Cleveland in a Suit

Washington, D. C., Dec. 5—The volume and conditions of trade for the year now rapidly drawing to a close have, on the whole, been very satisfactory to the automobile dealers of the capital city. The demand for machines during certain periods kept dealers busy to meet the demands made upon them. The feature of the year's trading was the increased demand for big cars, and the indications are that the new year will witness an even more pronounced demand for this type. This year may be set down as the banner year in the local automobile world, more machines having been sold than at any previous time in the history of the trade. The outlook for future business is exceedingly bright. Small delivery wagons are destined to have a big sale here next year, the few now in use having given satisfaction. In this particular branch Washington is practically an unworked field and as the conditions here are ideal for such vehicles, there is every reason to believe that many of the business houses will add them to their delivery equipment.

A controversy has arisen between the Cleveland Automobile Co., manufacturer of the Cleveland car, and the Willard Automobile Station, of this city. It appears that some time since the local concern purchased seven Cleveland cars, paying for them. Subsequently four more cars were sent on, which the Willard people refused to accept until the seven cars already purchased were adjusted. The Cleveland company then sold the four cars to the American Copying Co., whereupon the Willard Station replenished the cars to protect it in its former purchase. The American Copying Co., a Chicago concern, has had the court issue an order directing the marshal to retain the replenished automobiles pending the trial of the case.

The Tower Vehicle & Storage Battery Co. has been incorporated under the laws of the District of Columbia, with a capital stock of \$100,000. The incorporators are E. J. G. Tower, R. S. Donaldson and E. W. McCormick.

LOOKING TOWARD FLORIDA

Enthusiasts are now transferring their interests to the straightaway Florida beach courses. Bert Holcomb, who drove the Columbia car, "Old Betsy," from Chicago to New York in two of the three controls, and who was most responsible for the 76-hour record established, is now at Daytona, where he is overhauling a Columbia car preparatory to speed trials over the course. President Leonard D. Fisk, of the Automobile Club of Hartford, is soon to leave for a Florida season and will take with him either his Panhard or his de Dion-Bouton. James B. Moore has purchased an Autocar in which he will tour the country about Daytona, where he has been a winter visitor for many years. It is likely that other Hartford motorists will visit the same country to participate in the racing events.

DEALERS NEED MORE ROOM

Chicago Agents and Branch Managers Planning More Extensive Quarters To Handle Increased Volume of Business Next Season—Colony on Michigan Boulevard Growing

Chicago, Dec. 8—The automobile dealers of this city are preparing for a vigorous campaign next season, and the present indications are that Chicago will take a long stride ahead as an automobile city. There are now nearly 2,000 motor cars here and a goodly number are being sold at this time, regardless of the fact that several months of disagreeable weather will likely intervene before the balmy breath of spring brings joy to the pleasure-seeking motorist. A large number of car owners will continue to use their machines in traveling to and from their business, as they find they are more convenient than steam or electric trains. The advent of the limousine and other enclosed bodies have done much to increase the use of the automobile in winter, and many Chicago cars are now being so equipped.

Paradoxical as it may sound, the automobile dealers will get closer together and at the same time spread out more next year. The tendency to congregate in the automobile colony in Michigan boulevard is becoming more pronounced, and several of those who are now located in other parts of the city have either secured or are looking for locations in this district. The increased business that is confidently expected next year has caused several of the dealers to think their present quarters will not be large enough to accommodate the 1904 business, and the facilities will necessarily have to be increased.

The Ralph Temple & Austrian Co. has secured a lease of the ground floor and basement of the eight-story building now being erected in Michigan boulevard near Harmon court. The building will have a frontage of 78 feet and will be 130 feet deep. The automobile company will occupy the entire first floor for its sales department and will have its repair department in the basement, which will extend under the sidewalk. The new quarters will be ready for occupancy next April. The company intends to reduce its lines next season and the present intention is to handle only three makes of cars. One of these will be the Franklin, and the other two have not as yet been definitely selected. The past year the company represented eight manufacturers, and even with this number to select from it was often difficult to get cars from the factory to satisfy the clamorings of impatient customers. It is thought that with the increased facilities of the manufacturers they will be better able to keep up with orders, so this company feels safe in confining its efforts to fewer lines.

W. L. Hibbard, manager of the automobile department of the Studebaker Mfg. Co., finds that his present quarters are becoming cramped, and he is now casting about for some way to get more room. The company may possibly build in Wabash avenue adjoining its present building or the automobile department may be removed to that part of the building facing Michigan boulevard. The latter location is favored because it is near the Chicago Automobile Club and is also on the boulevard. The Studebaker company will

have six models next season. It is probable that only five of these will be on exhibition at the Chicago show, as the car which is to be equipped with the Edison battery will not be ready by that time. The electric delivery wagon will be ready for exhibition at the show. The company expects a large demand for surreys next season, and will build accordingly. The activity of the company in the gasoline car field will also be noticeable. The General Automobile Co., of Cleveland, O., is owned by the Studebaker company, and the General cars will be sold by the Studebaker agencies. About twenty of the 1903 model of the General are now in stock, and these will be finished and sold at a reduced price. The 1904 model will sell for about \$1,500.

C. A. Coey, of C. A. Coey & Co., went to Buffalo, N. Y., last week and placed a large order for 1904 Thomas cars, and some of these will be here in a few weeks. A few 1903 models were received this week. Mr. Coey is seeking a location in the automobile colony on Michigan boulevard and hopes to be there by spring, if not sooner.

The Cadillac Co. of Illinois, at 1312 Michigan avenue, is making some improvements in its building, and L. J. Ollier, the manager, expects a much larger volume of business next season. The company has not yet decided what other lines, if any, besides the Cadillac, will be handled.

The B-OK Tire Co. will make its headquarters with the Cadillac Co. the coming year. B. B. Kent will be in charge of the business.

No extensive changes have yet been announced by the Chicago branch of the Locomobile Co. of America. The first of the 1904 gasoline models arrived last week, and a purchaser was found before the week ended. Another car is expected this week.

Pardee & Co. will continue the Packard and Yale cars next season, and the company may possibly take on one or two more lines. Electric cars will not be sold, according to the present plans of the company. This company is also looking for larger quarters, and two locations are now in view. Githens Bros., the local Oldsmobile Co., are enlarging the stock room and making some changes in the repair shop. James Levy, of the Oldsmobile Co., is doing some experimental work and will have a gasoline car built along new lines ready for the show.

The Haynes-Apperson Co. branch here will be under the management of J. B. Deibler next year. H. A. Mack, who has been in charge for several months past, will go to Lima, Ohio, where he will open an agency for the Haynes-Apperson and perhaps one or two other cars.

The store of the Dan Canary Automobile Co., at 521 Wabash avenue, will continue to be the headquarters of the Panhard, Mors, Renault and other foreign cars, this department being under the management of F. L. Blain, the Chicago agent. Contracts for American makes to be handled by Canary will not be closed until the New York

show. Orlando F. Weber & Co., representing the Pope Motor Car Co., and F. C. Baneroft, representing the Rose Mfg. Co., makers of Neverout lamps, are located with the Canary company.

Charles P. Root will devote his energies to the St. Louis car next season, handling this in connection with the automobile launch business. Although having had the agency only since September, a number of sales have been made while the inquiry for the coming season is increasing. The agency at 435 Wabash avenue has the 1904 models on exhibition.

Perhaps one of the most marked improvements for the coming season will be the new building of the Winton Motor Carriage Co. This will be three stories in height and will be equipped with all the necessities that go to make a first-class automobile salesroom and garage. The location has not been definitely fixed yet, but it will be on Michigan avenue in close proximity to the present location of the company.

Frank P. Illsley will continue at his present location at 1421 Michigan avenue. The Peerless will be one car handled, and perhaps one other make will be added. One of the 35-horsepower Peerless cars will be on exhibition the latter part of this week. The repair shop is undergoing extensive changes and will be equipped to handle a large business next year. Several of the mechanics have been sent to the Peerless factory to learn the construction of that car, so they will be thoroughly skilled and competent to do first-class work next year.

The Mead Cycle Co. will next season handle the Benz car and the Orient buckboard. Some other lines may be added, but definite arrangements have not yet been made.

A. C. Banker has announced his intention of being a boulevardier next year, and a location for a building is now being prospected for. It is Banker's intention to erect a two-story building sufficiently large to accommodate his present business and allow a little leeway for the increase that present prospects seem to assure. The headliner for this firm next season will be the Autocar.

The addition to the manufacturing plant of the Woods Motor Vehicle Co. has been completed and will be occupied early in January. The company is now busy preparing for its exhibit at the New York and Chicago shows. Nine cars will be sent to the New York show and more will be exhibited at Chicago. The New York display will consist of a round front brougham, extension front brougham, landaulet, station wagon, surrey, victoria, stanhope, runabout and a Queen Victoria. A physician's car which will not be ready in time for the New York show will be on exhibition at the Chicago show.

The new model gasoline car of the National Motor Vehicle Co., of Indianapolis, Ind., will be handled next season by the Hayden-Croninger Automobile Co. This company is now erecting a building at 1337 Michigan avenue and expects to occupy it some time in January. A small car will also be sold by this company.

The partnership heretofore existing between F. D. Homan and T. E. Schulz, of New York, has been dissolved, and the business formerly carried on by Homan & Schulz at 2642 Broadway will hereafter be carried by Theodore E. Schulz, while the business of Homan & Schulz at 134 West Thirty-eighth street will be carried on by the Homan & Schulz Co.

ACTIVITY IN CLEVELAND

New Motor and Muffler Making Concerns—Company in Receiver's Hands—Show Arranged

Cleveland, O., Dec. 8.—The E. H. Clay Co. has commenced the manufacture of gasoline motors at Chagrin Falls, a suburb of Cleveland. The company made a start about two months ago, but lately its plant was destroyed by fire. It expects now to be in a position to make deliveries January 1. The motor is of the vertical, two-cylinder type, 5½ by 6½ inches. The machine measures 36 by 14 inches over all and weighs about 275 pounds, including fly wheel. The machine has heavy bearings, with 1½ inch crank shaft. The spark is of the make-and-break order and is wholly enclosed. One of the strong features of the motor is that it is copper jacketed, the jacket being caulked on with wire.

The Acme Motor Car & Repair Co. is manufacturing a muffler said to possess a number of advantages, besides being one of the cheapest devices of its kind on the market. It is cylindrical in form, 7 inches in diameter and ranging from 12 to 25 inches in length according to the motor, and is adapted for motors ranging from 4 to 15 horsepower. The exhaust enters through a port at one end and is carried out through three tubes arranged equilaterally and extending through the other end. The muffler is asbestos covered and it is claimed there is little back pressure.

The Cleveland Automobile & Supply Co. has been declared bankrupt. Thursday the company was placed in the hands of a receiver on the application of the Euclid Park National Bank, a heavy creditor. Friday the company filed a petition in bankruptcy. The same day the C. H. Gill Lumber Co. brought action to enforce the stockholders' liability. The assets will hardly sell for enough to pay the debts of the company. The concern was the outgrowth of the first attempt to handle automobiles in a retail way in Cleveland. Four years ago Collister & Sayle opened an automobile department. A year later the department was turned over to the company above mentioned, which was organized by Collister, Sayle and Macey Wright. A year ago Collister and Sayle sold their interests and George Pettingill, Walter Crawford and others became interested. Plans were made for expanding the business and at an expense of \$12,000 the company erected a garage on Vincent street. A number of private automobiles stored with the company were tied up through the failure, but matters were adjusted so the owners were able to recover them. At the present time it is not known what disposition will be made of the property, but the probabilities are that it will be taken over by another concern in the same business, the building being well designed for the purpose for which it was intended.

A successor to the Star Automobile Co. has made its appearance. All the machinery, material, patterns, patents and other tangible assets of the company have been purchased by Harry S. Moore, who for the past two years has conducted an automobile garage at the corner of Hough and Crawford avenues, handling the Elmore and Shelby lines. This year Mr. Moore found it difficult to secure prompt deliveries and for the coming season he proposes to manufacture his own automobiles and sell a considerable portion of the output

from the garage. He has erected an addition to his building, has moved the Star outfit and will manufacture a runabout similar in design to the Star to sell at a moderate price. He is making up about a dozen from the material on hand and will probably build as many more.

The Cleveland Automobile Club met Friday evening and decided favorably on the proposition of conducting the Cleveland automobile show this winter. In view of the experience gained through the show last year the club appointed H. F. Shupe, George Collister and William F. Sayle as committee in charge of affairs. A number of leading manufacturers have not as yet obtained agents in Cleveland and this fact leads to the belief that aside from the displays of the local dealers there will be a number of manufacturers who will exhibit in the hope of attracting favorable attention to their lines and thus securing representation.

L. J. Mueller, who for the past year has conducted an automobile store at 1153 Woodland avenue, has practically withdrawn from this business and is now on the road as sales agent, handling the lines of the Champion Mfg. Co., Newark, N. J.; Hussey Drop Forging & Mfg. Co., Cleveland, O.; Otto Konigslow, Cleveland, O.; Auto Supply Co., New York, and the New York Coach & Auto Lamp Co., New York.

PROPOSE MAXIMUM FINES

Washington, D. C., Dec. 5.—Commissioner West has submitted to his associates on the board a statement relative to the automobile regulations which were adopted in August last, suggesting that the present rules should not be declared inadequate until they have been fully tested by the imposing of the maximum penalty upon persons convicted of violating their provisions. The statement was the outcome of harsh criticism of the regulations by the local papers. The statement is in part as follows:

"On November 29 last the automobile regulations adopted by the commissioners and sustained by the courts had been in operation three months. With the view of learning the manner in which the regulations had been executed by the police force and administered by the police court, I have obtained from the major of police a complete list of all arrests for violation of the automobile regulations since they went into effect, including the regulations concerning speed. The information, which is now at hand, shows that during the period named the police made 53 arrests, of which 40 were for fast running.

"An examination of the disposition of the cases shows that the maximum fine of \$40 has not been imposed by the police court in a single case. In fact, out of the 40 arrests for fast running a fine of \$20 was imposed in only seven cases, a fine of \$10 in ten cases, while all the other offenders were allowed to depart with penalties ranging from \$1 to \$5.

"The commissioners will remember that the automobile regulations were framed with the knowledge that they would have to run the gauntlet of strong opposition and the scrutiny and judgment of the courts, and the conservative action which this knowledge compelled was fully justified when the regulations were sustained in every particular as reasonable and just. It may be that time will demonstrate that the regulations are not sufficiently severe; but it seems to be that this fact cannot be proven until the maximum of the penalty has been imposed for violation of the regulations, especially where the offenders are twice or three times placed under arrest."

NEW YORK GARAGE NEWS

Items of Trade and General Interest Picked Up at the Automobile Stores of the Metropolis

E. S. Partridge, the new vice-president of the Standard Automobile Co., who is in charge during the absence of Manager Birdsall in Europe, is paying particular attention to fitting up the repair shop in the Thirty-ninth street garage. It occupies almost the entire second floor of the building. A former foreman of the Panhard-Levassor shop is in charge.

One of the new Cadillac delivery wagons is now on exhibition at the garage of the Cadillac Co. of New York on Thirty-eighth street.

The Studebaker Bros. Mfg. Co. has received an order for twelve electric wagons from the Edison company. They will be fitted with Edison batteries.

The Knox Automobile Co.'s New York branch and C. A. Walker and H. A. Rutherford, local agents of the Crestmobile, are fitting up garages at 152 and 154 respectively on the Thirty-eight street automobile row.

Arthur Herschmann has completed for Adams Express Co. four 15-horsepower steam wagons for long and heavy hauling. Three of them are cage vans. The new vehicles have many improvements in machinery detail. The engines are now so concealed that the vehicles can hardly be told from electrics. Mr. Herschmann has also booked orders for engines and vehicles for the Steam Wagon Co., Hebdon Bridge, England; Pickford Ltd., the great British express concern, and the Larrimaga Steamship Co. of England. Mr. Herschmann has schemes on foot to extend his system in the twenty countries in which it is patented.

President Percy Owen, of the New York Automobile Trade Association, called a special meeting of the association for last Thursday to take up the winter's work and enter upon an active campaign for the strengthening of the organization. Twelve concerns sent representatives. The chief discussion was on the proposition to amend the constitution and bylaws so as to provide for the conduct of the affairs of the association by the members at large instead of by an executive committee. The idea was that such method would insure more all-around enthusiasm and work. Representatives of the American Automobile Storage Co., the Central Automobile Co. and the Automobile Exchange and Storage Co. were appointed a committee to formulate the changes. It will report at a special meeting to be called in a few days. It is proposed to abandon regular meetings and hold only special meetings of the association for the consideration of particular trade problems that may be presented.

The Electric Vehicle Co., whose Columbia gasoline touring car finished second in the touring class at the Eagle Rock hill climb on Thanksgiving day, has protested the award of first prize to the Phelps car on the ground that it was stripped of mud guards, baskets, tool boxes, lamps, etc., a tonneau merely being put on the chassis used in a previous race, while on the other hand the Columbia complied with every touring condition in its equipment.

Percy Owen, of the Winton Motor Carriage Co.; F. C. Armstrong, of the Electric Vehicle Co., and John F. Plummer, of the Locomobile Co. of America, are the local committee in charge of the N. A. A. M. annual show week banquet, which will probably be held at the Cafe Martin.



HAS SPEED AND COMFORT

One of the first and successful American automobile boats was built by F. A. La Roche and has been in commission all summer. The hull was designed by Herreshoff, and the engine was designed and built by Mr. La Roche. The boat has a length over all of 32 feet, has 8 feet beam, draws 18 inches, and is built on torpedo lines, with full stern and sharp lines forward. The boat is roomy, being designed for private use and comfort.

The engine is placed about 10 feet from the stem, and on both sides of the engines are lockers, in which the batteries and coil are located. Back of the engine is a large space the full width of the boat and 12 feet long, which is carpeted and furnished with reclining chairs. The engine is a four-cylinder four-cycle automobile motor, the control being the same as an automobile. The steering device is also the same, with change gears and reverse gear for different speeds. The propeller is 11 inches and is turned up at 1,600 revolutions per minute. It is estimated the boat will make 16 miles per hour, the motor developing 20-horsepower. The boat is equipped with a spray hood, which in calm weather is let down over the combing.

Mr. La Roche is president of the F. A. La Roche Company, importers and distributors of the Darracq automobile, and a prominent member of the Columbia Fishing Club.

AUXILIARY POWER IN DEMAND

The desire for auxiliary power among sailing enthusiasts has created a further demand for gasoline motors, and already many engine builders have orders to equip sailing craft with power of some sort. It is no longer fashionable to be compelled to lay-to because of a calm, and possibly keep a party out half the night. Light weight automobile motors have no perceptible effect upon the trimming of a boat, and, being used only occasionally, will last indefinitely. In the near future there will be few yachts of any material size not equipped with sufficient power to enable them making port during a dead calm. The ocean fishing fleets are now pretty generally fitted this way; in fact, a boat not so equipped stands little chance to compete with her more modern rival.

BIG DEMAND FOR BOATS

The power boat makers are credited with having reaped their greatest harvest during the season which has just closed, and already most of them have so much early 1904 work on hand that they have been compelled to materially increase facilities, some even doubling their capacities. This well illustrates not only the fact that the power boat is ap-

AUTOMOBILE BOATING

preciated from the pleasure point of view, but that it is a commercial necessity as well. Those small freighters and fishing smacks which during the past year depended upon wind for power have seen their rivals having auxiliary power in the form of gasoline motors forging away from them in a manner to set their owners thinking, with the result that many boat builders have orders now for equipments to be ready for spring use.

By the end of the coming season there will be few of the small boats which will not be fitted with motors. Even some of the most ardent amateur sailors, who have most emphatically pooh-pooed anything of a motor nature, are now appreciating how comfortable it is to get home during a dead calm with the aid of a small motor, and inquiries among makers from this class have been numerous.

The boat and engine makers report there is every indication that notwithstanding their increased facilities they will be hard pushed in the spring to fill orders with promptness, and it is reasonable to predict that 1904 will be the banner year among them.

SURELY A NOVELTY

One of the "novelty" boats being built by a Michigan concern for use in the lagoons of the St. Louis fair will be such as to most thoroughly convince anybody from the state where in the fair is to be held. It will be 30 feet



MOTOR AGE

The La Roche Motor Boat

long, about 5½ feet wide, and with comparatively little freeboard. Looking at the boat's side it will have the appearance of a huge dragon in all colors sufficient to complete its hideousness. The shudder-giving appearance of a dragon's head will be augmented by huge green eyes, in which will be electric lights, while the exhaust from the small gasoline motor will belch forth from its nostrils.

ADOPTING AUTOMOBILE FITTINGS

If the automobile operator shall have his way when all his clan have become interested in power boats, the present unhandy steering wheel, away from the motor, will have seen its day. Being accustomed to have steering wheel and all controlling devices well within reach, the future launch may be expected to be rigged with a comfortable, finely upholstered individual seat, steering wheel a la automobile and all operating levers so conveniently arranged that there will be no occasion to move from the seat once the motor is started until the journey is ended and the boat has reached her mooring.

BANDITS WANTED A LAUNCH

It is now definitely known that Chicago's famous car-barn bandits inhabited the dugout in Indiana where they made their last stand as early as midsummer of the present year and that they contemplated using a launch in their operations, in what manner is not known. Two

of the bandits applied to a Chicago boat agency for a small second-hand launch, saying they owned a dugout or shack in northern Indiana, near the Calumet river and Lake Michigan which they inhabited during the hunting season. The launch desired must be reliable and they would run it under its own power to a point on the lake shore near the hut. They were referred to a boat liveryman and deposited \$10 on the purchase of an 18-foot launch, but were never again seen. Whether the launch was to be used to carry away booty or to assist in escaping arrest has not been shown.

BOATING A MILE A MINUTE

With the automobile going better than a mile a minute, the power boat enthusiasts are now striving to force up the speed of their pets, and the power boat doing better than 60 miles an hour is on the way, only it will be an ice boat. An eastern motorist and ice boatman has begun the construction of an ice boat of large dimensions, but it will be minus the customary spread of canvas, and for power a four-cylinder, 16-horsepower automobile motor will be used. The motor will be set a little ahead of the midship section and will have the customary reverse clutch connecting the driving wheel.

The driving wheel will be about 3 feet in diameter, of light yet substantial construction, having wire spokes and a flat rim, in which will be inserted short, sharp prongs, which will engage the ice. The driving wheel will have a spring attachment to give it traction. The wheel itself will be located about midway between the after end and amidship. The motor will be geared high, as it is figured that the slight resistance offered to an ice boat will permit this and thereby transmit an immense amount of power, if the motor is permitted to turn up to its maximum speed.

SWISS BELIEVERS IN STEAM

The motor boat fever has reached the conservative little republic of Switzerland, which, although not blessed with a great expanse of water, has already held a number of races. The two most important events were won by M'Amour, a 32-foot craft, having less than 5 feet beam and built with overhanging stern. The boat was built by Louis Trub, of Geneva, who is a believer in steam. The boiler and engine are placed nearly amidship, and the boat is also rigged with a single sail to steady it in heavy weather. The boiler is of the water tube variety and the engine a fore-and-aft compound. The steering wheel is located abaft the boiler, so that all the load is placed for perfect trimming of the boat.



MOTOR AGE

M'Amour, a Steam Racer

OLD WORLD MOTOR NEWS CONDENSED

An exclusive automobile show will be held in Amsterdam, Holland, in the spring.

Le Auto has opened a subscription for funds to erect a monument in memory of Count Chasseloup Loubat.

The Austrian and the Italian Automobile clubs will arrange a tour in connection with the Gordon Bennett race.

The German military authorities have ordered a number of motor bicycles to be used for scouting purposes in next year's maneuvers.

The de Dion-Bouton company of Germany was formed in October, and will build de Dion cars in Mulhausen for the German market exclusively.

An automobile show will be held in Frankfurt, Germany, March 19 to 27, under the patronage of Prince Henry of Prussia, brother of the emperor.

The German Motor Cycle Association, which was organized May 27, had 1,000 members October 27. This is certainly a remarkable showing for 5 months.

During the Paris automobile show an automatic starting competition for explosive motors will be held. The competition will begin December 15 and is reserved for motors exhibited at the show.

M. Gabriel is now in the employ of the de Dietrich company and it is probable that he will drive a de Dietrich car in the Gordon Bennett race next year, if this car qualifies in the preliminaries.

Albert de Pallange, the driver who was permanently crippled last year in the accident in which Count Zborowski was killed, has brought suit for \$20,000 against the nobleman's family, claiming the count was entirely responsible for the accident.

There are about 3,000 automobile owners in the province of Brandenburg, which includes Berlin, and about 1,000 in the province of Hessen-Nassau, which includes Frankfurt. Judging by these figures there are 12,000 automobile owners in Germany.

Between 250,000 and 300,000 people visited the Brussels automobile show last year. The crowd was so large at times that the police ordered the ticket office closed. This year the authorities will not permit the selling of more than a certain number of tickets.

A few weeks ago, when out driving, the car of Madame Bob Walter, of Paris, skidded on the greasy pavement and knocked down a French peasant, injuring him slightly. Madame Bob offered to pay damages, but the countryman refused, saying he preferred the award the court would give.

Plans for an automobile race track to be built at Juvisy, near Paris, have been completed, and the grounds, which contain about 190 acres, have been leased conditionally until December 31. The track will be 5 kilometers (3 miles, 188 yards) and the turns, which will

be banked 10 per cent, will be a quarter-mile wide.

A motor cycle race was held near Marseilles, France, November 8. Nineteen of the twenty-eight starters finished the race, which was run over a course of 60½ miles. There were eight tandems among the contestants. The winner, M. Brodeur, covered the distance in 2:49:30 on a Foudre motor cycle equipped with a 2-horsepower Buchet motor.

The commission from the chamber of deputies of France in a recent communication stated that since 1899 the number of purely commercial automobiles used in France has increased 65 per cent. Official figures show that there were 234 such motor cars in France in 1899. Last year the number amounted to 1,849, while a few months ago the total had reached the remarkable number of 3,029.

A motor cycle endurance run, which will last a week and take place at Milan in January, has been arranged. The course covers 450 miles, starting at Milan, extending to Nice, thence back to Milan over a different road. The rules provide that motor cycles shall not weigh over 110 pounds, may be run at an average speed of 21¼ miles, but not less than 12½ miles. Brake and starting tests will be made when reaching hilly parts of the road.

The newly-appointed minister of public works of Italy has appointed a committee of three members to revise the present automobile regulations. Almost all the Italian automobile clubs, as well as the manufacturers and dealers, have protested against the fact that not one of the three members is a competent judge, as they are civil engineers. The Italian motorists want to have at least one automobilist on the committee.

The Automobile Club of Belgium has been asked by the Automobile Club of Great Britain if it will be possible to make arrangements to run the English Gordon Bennett trial race over the Circuit des Ardennes road. Baron de Crawhez answered that the Belgian club would do everything possible to render assistance to the English club, and that it would immediately communicate with the Belgian government for the purpose of securing the necessary permit to hold the race.

During its regular 1902-1903 business season, the Daimler Gasmotoren Gesellschaft, manufacturer of the Mercedes cars, showed a net profit of \$130,559, against \$73,247 for the preceding season. The German company valued its Cannstadt factory at \$165,502 and the machinery, etc., at \$138,769. The Marienfelde plant is valued at \$737,840. Last year the company paid a 10 per cent dividend, while this year it is said that the dividend will be 20 per cent.

Baron Henri de Rothschild has donated another cup for a special event to be run during the Nice meeting, in France, over a distance of 1 kilometer, with flying start. Leon Serpollet won the first cup last March, having previously been the winner at the meetings of 1901 and 1902. The cup must be won three times by the same driver to become his property. The event

is open to cars weighing from 1,430 to 2,200 pounds, and carrying two passengers weighing at least 120 pounds each.

S. F. Edge, of the British racing team, will be one of the speakers at the A. C. A. annual banquet at the Waldorf-Astoria, New York, on January 23. The A. C. A. is to have a holiday smoker on December 29, with professional vaudeville talent.

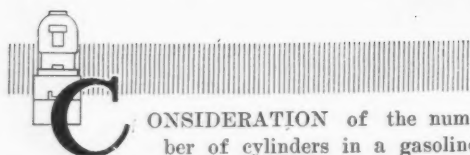
The first big road race on African soil was run November 22, near Alger, Algeria. The distance was 100 kilometers and the time of the winner 1:22:00, made during a driving rain. An event for cars with single cylinder motors was run at the same time over the same distance and road. The first event was won by Bellemare, with a 14-horsepower Renault, with Duvivier, 24-horsepower Darracq, second, in 1:44:10 1-5. The second event, the Guerin cup race, was won by Homolle, 9-horsepower Renault, in 2:01:03, with Perrin, 8-horsepower Ader, second, in 2:05:53.

"Der Automobile Sport" is the title of a book written by Mr. Max R. Zechlin, a civil engineer of Charlottenburg, Germany, and published by Grethlein & Co., of Leipzig. In it the author, after a short history of the early motor driven cars, describes all the different kinds of automobiles, from small runabouts to heavy trucks and tractors. An important chapter in the book is the one relative to the handling of motor cars. The sport itself has been given but little attention, as the author's intention was especially to describe the touring and commercial vehicles.

An international competition for motors, motor cars, etc., using denaturated alcohol, will take place in Rome from February 6 to 16, 1904. The Italian minister of industry and commerce will have charge of the competition, and has adopted the following program: Category 1—Motors with denaturated spirit; motors of less than 2-horsepower; motors of 2 to 6-horsepower; motors of 6 to 10-horsepower; prizes, two gold medals from the Italian minister of commerce and industry, and three silver and bronze medals. Category 2—For motor cars with denaturated spirit; motor cycles; small carriages; carriages; vans for industrial purposes; prizes, one gold medal from the king of Italy; two gold medals from the minister of commerce and industry; four silver medals and bronze medals.

The general manager of the Berliner Motorwagenfabrik Tempelhof, of Berlin, Germany, took with him to the Chinese port a number of mechanics and drivers and other employees of the factory, to care for the automobiles and to see that they reach Pekin in good order. He expects to organize a class of instruction in automobiles among the sixty to seventy Chinese engineers who are coming to Tientsin from many parts of the empire, to study the automobiles and become acquainted with their mechanism and handling. Three of the cars are for the personal use of the emperor, the empress and the dowager empress. The Chinese arms are painted on each side of each of these cars, while a large dragon is painted on each of the other thirteen cars. The interior of the royal cars is very elaborate in finish and decoration.

WHY THREE CYLINDERS



CONSIDERATION of the number of cylinders in a gasoline automobile is of the greatest importance, yet neglected by most people. To many the single cylinder appeals because it is unquestionably simplest and, without sufficient experience in the matter to guide them, they assume simplicity to be a leading virtue and choose the single cylinder.

The advantages of the single cylinder are greater efficiency, more compactness, fewer parts and less cost. The disadvantages are greater weight for a given power, because of the large fly wheel necessary; imperfect balance, with consequent ever present vibration; absence of reserve power in case any part of the cylinder is disabled; and lack of uniformity of motion and freedom from jerkiness, contributing to comfort of the passengers and long life of the mechanical parts.

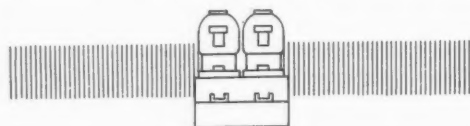
To explain more fully these four objections, it is evident that since the ordinary four-cycle motor secures but one power impulse in four strokes of the piston, a large fly wheel must be provided to continue the speed of the motor until another power impulse is received. Further, since all the work is done by a single impulse in two revolutions of the crank shaft, not only must the fly wheel be made heavier, but the other parts of the motor must be made heavier to stand the strain of this powerful impulse; so that a single-cylinder motor of given power is unquestionably heavier than a multiple-cylinder motor for the same power. Then the most objectionable place for weight is farthest from the carrying parts and on this account a heavy motor is decidedly objectionable. It will be readily seen that a heavy tire resting on the ground, and carrying its own weight, does not strain the remainder of the vehicle; but a heavy motor is a dead load which must be supported by the framing and this heavy framing must be supported by heavy springs and these in turn require heavier axles, which require heavier wheels and tires. Each additional pound added to the motor or to the load requires additional weight in every supporting part down to the road. On account of this fact it will evidently not be many years before makers will be willing to put in additional cylinders in order to save weight and cost in other parts.

The same argument applies to a powerful motor. If the vehicle has ample motor and but little else, it can go anywhere desired; whereas if it has but a small motor, it must have a wide range of gearing in order to accomplish results of value. It is, therefore, safe to say that the motor is the most essential part of the vehicle and it should be ample in power, rather than the reverse. It is poor economy to practice saving at the motor and the fact that each user buys more power each time is proof sufficient of this statement.

Regarding balancing, it is well known that a single-cylinder engine cannot be perfectly balanced. If the crank and connecting rod is

balanced, the piston remains unbalanced. If sufficient weight is applied to counter balance the piston a crosswise vibration is set up, due to the overbalancing of the crank and connecting rod. In either event it is impossible to balance a single-cylinder engine without providing some secondary reciprocating part like a pump plunger or the piston of another cylinder. But the mechanical balance is not the most important feature, for the vibrations set up by the rapid movement of a small piston are not of great moment and therefore not greatly disagreeable. It is when the single cylinder, necessarily large for a given power, begins to yield its occasional impulse that the vibration becomes objectionable. Action is always equal to reaction, and the impulse of the exploding charge against the piston and the heavy fly wheel produce a reaction of the motor, the framing on which it is supported and the body of the vehicle in a reverse direction.

Really, then, the objectionable feature of a single-cylinder engine is the reaction of the impulse, and not the lack of mechanical balance, although this aggravates the effect. With a heavy fly wheel yielding slowly to the sudden impulse of the explosion, the vehicle receives greater reaction, and the relative motion of the two is proportionate to their respective weights and in opposed directions. Thus it will be seen



that the heavier the motor frame and vehicle body, the less the vibration caused by the impulse reaction, while the lighter the piston, crank shaft and fly wheel, the less the perceptible vibration. On this account a multiple-cylinder motor, being able to run with a very light fly wheel, is relieved of the major portion of the vibration that would otherwise be present.

In the matter of reserve power, it is quite evident that two horses are better than one. If a single cylinder in a multiple motor goes wrong, the others are probably not incapacitated and the vehicle may continue its way more or less impeded, according to whether two, three, four or more cylinders are in use.

While it may be claimed that a single cylinder being simpler, is less likely to go wrong than a multiple-cylinder motor, this claim is incorrect. A single cylinder is no simpler than any one cylinder of a multiple motor, but on the other hand, a multiple motor is much simpler in proportion to the cylinders employed than is a single-cylinder motor, because in either case one fly wheel, one set of cam shaft gears, one source of electricity, one fuel tank, one carbureter, one water tank, one cooling system, one framing, one crank case with its splash oiling system, one muffler and one transmission gear are used. The duplicate parts are a longer crank shaft, sometimes having additional bearings; a longer cam shaft and duplicate cylinders, pistons, connecting rods, valves and spark plugs or sparker mechanism. These parts being duplicate are just as easily understood and just as easily taken care of as the same parts on a single-cylinder engine, while being duplicate, no more extras need be carried for repairs. Furthermore, if any one cylinder goes wrong, the condition of the good

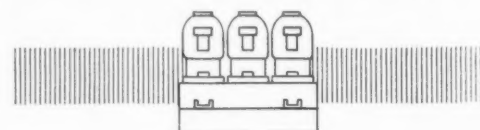
ones will show even a novice what should be the condition of the bad one and thus serve as an illustrated model by which to make repairs on the defective cylinder. Finally, in most cases, a defective cylinder does not stop the running of the engine and repairs can be made at will instead of per force where the trouble occurs as with a single-cylinder motor.

Everybody appreciates a steady application of power and a rotary motor, if otherwise perfect, would be the ideal form. The multiple-cylinder motor permits an approach to this by securing two or more impulses in each two revolutions of the crank shaft and this uniformity of motion not only permits a lighter fly wheel, but permits light motor parts, lighter framing, lighter transmission gear and adds length of life to every part.

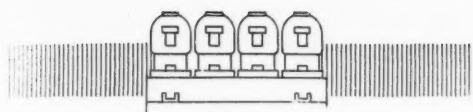
The argument in favor of more than one cylinder will not find many opponents, but if we decide in favor of multiple cylinders, the question at once arises, how many?

The double-cylinder must first be considered. This motor is ordinarily of two kinds—twin cylinder, in which the cylinders are side by side; and opposed cylinder, placed one each side the crank shaft. In order to balance the pistons and thus secure satisfactory mechanical balance, the crank shaft for a double motor is usually double, with one crank 180 degrees from the other. If of the twin variety the impulses are at one-half of a revolution and then one and one-half revolutions apart; an irregular application of power, much better than that of a single cylinder, but still decidedly unpleasant and suggestive of the single cylinder. If, in the twin cylinder form, both pistons are attached to a single crank, the impulses occur regularly one revolution apart, which secures steady driving so far as the impulses are concerned, but adds the same difficulty of balancing found in the single cylinder. Those who favor the vertical motor are of necessity compelled to use the twin cylinder form, but some modifications are now being used, in which the cylinders are placed 60 degrees or 90 degrees apart, thus more evenly dividing the irregular space between impulses. In any event this form of motor is more or less of a compromise and is not likely to be a permanent form.

If the twin cylinder motor is placed vertically, it is even more objectionable than the single form in the matter of lack of mechanical balance. A vertical motor tends to vibrate in the direction of the spring motion and thus may accelerate roughness in the road, while the springs and tires vibrate synchronously with the motor in a very disagreeable manner. On this account vertical motors are likely to be of more than two cylinders so as to secure a more perfect balance than can be secured with the twin motor. The twin motor, of course, can be placed horizontally, either crosswise or lengthwise of the vehicle, but no matter how placed the resemblance to the single cylinder in the matter of unpleasant vibration from the arrangement of the impulses is bound to exist. The single-cylinder motor is used most largely in the horizontal form and the twin cylinder resembling it would seem best if so placed, but the attempt is



EDITOR'S NOTE—This article is by Charles E. Duryea, who by his long experience with three-cylinder motors, is well qualified to discuss their comparative merits. The subject is an interesting one in view of a tendency both here and in Europe to adopt the three-cylinder motor, and MOTOR AGE will be pleased to receive other opinions concerning it.



usually made to secure small cylinders of short length and place them vertically.

In the opposed-cylinder style the parts are in mechanical balance, and the impulses but half as large as they would be in a single cylinder of the same power. The fly wheel may be much smaller, and since with small parts it is customary to use shorter strokes, the speed of the crank shaft in revolutions per minute may be higher to secure any given piston speed; which is the limiting feature in the matter of engine speeds. With the opposed-cylinder form it is necessary to maintain the motor in a horizontal position. This position as compared with the vertical position is considered best for single-cylinder motors and such authoritative practice as stationary engine construction is greatly in favor of the horizontal motor instead of the vertical, the high-priced and most practical motors as a rule being horizontal, although some first-class constructors use the vertical form.

In vehicle work the length of the vehicle offers the greatest resistance to vibration, so that less motor effect is noted if the motor lies lengthwise the body of the vehicle than if it is placed crosswise or vertically. There is no denying this fact and on this account motors should be placed lengthwise if possible to design other parts to permit this with equal satisfaction.

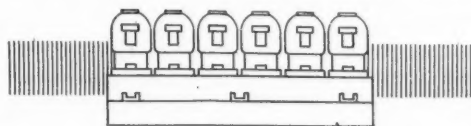
With the opposed form the heads are in opposite directions, the water jackets are separate, the spark plugs with their wiring, the valve operating mechanism, the inlet and exhaust connections, as well as the water pipe and water jacket must be duplicated at the opposite ends of the motor, thus increasing the number of parts over those required by a twin-cylinder motor. This increased number of parts adds decidedly to the complication and very frequently necessitates placing one cylinder in an inaccessible position in the vehicle. In some instances two carbureters are used and even two mufflers, further increasing the complexity. On hills one motor is of necessity lower than the other, which may affect the lubrication or the feeding of the explosive mixture. The great advantage of the opposed cylinder style is that it is no wider than a single-cylinder motor of half the capacity and on this account gives ample room for transmission gearing. It is undoubtedly the best of the two-cylinder forms and gives excellent satisfaction. It is sometimes placed crosswise the vehicle, although ordinarily too long for this arrangement. When placed lengthwise it is usually not possible to get it in the space under the seat, so additional body room must be provided or else the floor of the vehicle must be placed above the motor, raising the passengers too high for comfort and safety.

With three cylinders, the explosions may follow each other regularly two-thirds of a revolution apart, each cylinder exploding once in two revolutions. This makes an almost constant application of power, absolutely steady, and with the cranks set 120 degrees apart. The mechanical parts are in balance, so that the motor is in perfect balance. Since, however, these three cylinders must be placed side by side, a long crank shaft is required, and if one fly wheel only is used, this is some distance away from the farthest cylinder, creating a little

lack of balance in the plane of the cylinder. This same fact exists in a less degree with all other forms of motors where a single fly wheel only is used and can be overcome in any case by the use of double fly wheels. It is advisable, however, to have the fly wheel between the motor and transmission gear and seldom advisable to use two in motor vehicle work, so this slight objection must remain against the triple cylinder motor.

It is sometimes denied that triple motors can have their parts in mechanical balance, but splendid authorities, like Unwin's Machine Design, say this can be done and it is readily demonstrated by testing the parts in various positions. Certain it is that if the triple-cylinder motor does not absolutely balance it is so nearly in perfect balance that the results are satisfactory. The triple motor need have but a single water jacket, a single supply pipe leading to the inlet valves, a single exhaust pipe leading to a single muffler, a single mixer to supply fuel, a single throttle to control the three inlet valves, a single cam shaft to operate the exhaust valves, and single cam gears to operate the cam shaft. It is thus not much more complicated than a single-cylinder motor, excepting that there are two more bends to the crank, two duplicate cylinders, pistons, connecting rods and valve parts.

Since the twin motor does not give regularly spaced impulses and the opposed-cylinder motor is not compact or simple, the triple-cylinder



motor becomes the one most simple in proportion to the results obtained, or in other words, it is of the least number of cylinders that will give multiple-cylinder results, and on this account is destined to be the ultimate form for motor vehicle service.

The fact that first-class concerns, like the Panhard, are taking up the triple cylinder for 1904 indicates the growth of public opinion along this line. It may be argued that if three cylinders are good, four are better, and six or eight better still, but this argument does not follow. While four cylinders can be fed from a single mixer, it is not advisable to exhaust four cylinders into a single muffler, for the exhaust valve is ordinarily open more than half a revolution, which would leave a possibility of one cylinder exhausting into and causing back pressure in another cylinder, of which the valve was beginning to close. Two mufflers are therefore required to get best results with a four-cylinder motor.

Since the desirable form of motor vehicle motor is that which gives the best results, with the least number of parts, it would seem that the triple does this, for it secures almost constant application of power with the least number of parts in the most compact form. It may be arranged most satisfactorily in the vehicle. Being substantially free from vibration it can be placed vertically or horizontally, or better yet, inclined, for if inclined it combines the advantages of both the vertical and horizontal forms.

It is the writer's practice to place the triple motor lengthwise the vehicle, with the heads to the rear, but 15 to 25 degrees higher than horizontal. In going up hill, the tendency is to increase the lubrication of the cylinders, for hard work is being done and ample oil is needed. In going down hill, the angle of the

motor is greater, the oil gets back to the splashing case quicker and the lubrication is lessened.

A triple motor of 10 to 20-horsepower can be narrow enough to be placed crosswise the vehicle and still leave room for the transmission gear in a body of ordinary carriage width. This arrangement of the transmission gear on the motor shaft is the simplest one possible and by placing the motor near the rear axle, a short chain connects the two, so that no simpler system than this can be devised and while it is possible to use smaller cylinders, four in number in this manner, the increased number of cylinders is not advisable, for a great many reasons.

It is well known that the larger the number of cylinders for a given power the less the economy of the motor, due to loss of heat through the walls; or, in other words, economy is gained by decreasing the number of cylinders, and since the triple-cylinder motor gives all the advantages of any multiple-cylinder motor almost perfectly, it is folly to increase the number. It is well known that for any given result, the simplest mechanism is the best, and the writer believes the triple-cylinder motor both gives the result and secures the greatest possible simplicity therewith.

CENTURY OLD EXCERPT

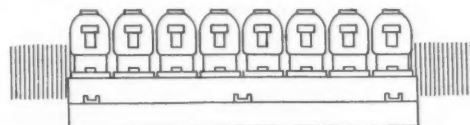
An eighteenth century automobile is rather meagerly described in the Massachusetts Magazine or Monthly Museum of Knowledge and Rational Entertainment in the issue of September, 1793. The bound volume of the magazine for that year has been loaned to MOTOR AGE by D. E. Avery, of 218 East Fifty-fifth street, Chicago, from which the extract under the title of "Curious Carriage," is taken. It reads:

"Mr. Blanchard, of Philadelphia, has invented a carriage which runs without the assistance of horses, and goes as fast as the best post chaise. An automation of the shape of an eagle, chained to the tongue of the carriage and guided by the traveler, who holds the reins in his hands, directs it in every respect. This extraordinary carriage can not only travel on all roads, but likewise ascends any mountain which is accessible to any common carriage. The Eagle fixed to the carriage begins its flight. The carriage will come out of it, and stand and run around the place, carrying two persons. The distance it may proceed is unlimited, as there are no springs in the case that require winding up."

EXTENSIVE GARAGE

A new automobile building is now in course of erection for the Motor Car Co. of New Jersey, at Newark, N. J. The ground floor of the building will cover over 10,000 square feet. This space is divided into a salesroom, storage department and repair department. Leading from the sales room is the company's office and a smoking room for gentlemen, where will be found trade literature, maps, routes and all matters of interest to the motorist.

A sitting room for ladies will be suitably equipped, and there will be lockers for customers. The sales room window is large enough to place two touring cars lengthwise. A full line of supplies will be carried.



THE FIELD OF AUTOMOBILE DEVELOPMENT

FOR STEAM CARS

For users of steam cars the National Oil Burner & Equipment Co., of St. Louis, Mo., has introduced the Branch steam accelerator, a device that may be attached to the burner of any steam car, and which, as implied by its name, is intended to assist the mixing of the generated gases and air in the main burner by means of steam, the ultimate intention being to effect more nearly perfect combustion, save fuel, increase boiler power and permit the forcing of the fire at any time from the seat of the car. The attachment may be used in connection with either gasoline or kerosene burners.

The illustration shows the accelerator connected into a burner of ordinary form. The accelerator is placed with its nozzle extending into the mixer and from the boiler receives steam, which is discharged into the mixture when the boiler pressure has reached about 5 pounds. It shuts off the oil supply automatically at 220 pounds steam pressure and relights the burner from the pilot when the steam pressure drops to about 200 pounds.

CONVENIENT AMMETER

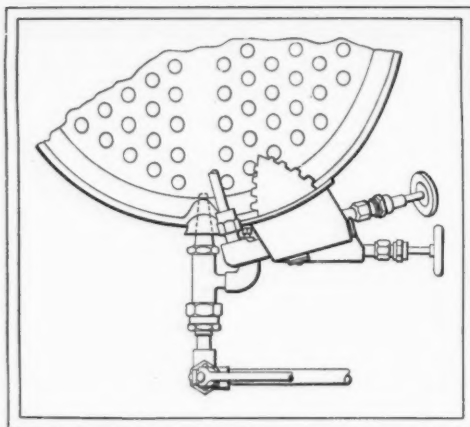
A new instrument known as the Eclipse pocket ammeter has been placed on the market by the Eldridge Electric Mfg. Co., of Springfield, Mass. The new ammeter is for general battery testing and registers from zero to 15 amperes. It has a flexible cord and a contact spur, the latter located at the bottom of the instrument, and by an ingenious arrangement the spur can be withdrawn into the case, enabling the ammeter to be carried in the pocket. The contacts on both cord and spur are made of non-corrosive metal, hardened and polished. The instrument is the size of an ordinary watch and is light. It can be used in any position and works in either direction of current. The ammeter has been particularly designed for automobile and launch use and is guaranteed by the makers to be accurate.

P. & B. TUBULAR WHEEL

In the new metal wheel being manufactured by the Parish & Bingham Co., of Cleveland, O., the tubular spokes are novel in that the electric welding process of the Standard Welding Co., of Cleveland, enters prominently into their construction. The butt of the spoke is key-stone shaped on both sides, and each butt consists of two stampings welded together edge-wise. The butt is welded to a piece of 16 gauge tubing, also of the welded type. The end of the spoke is threaded and is secured to the rim by means of a nipple. A copper washer is placed around each nipple close to the rim and it is claimed that this washer will take up all vibration and prevent the crystallization of either the spoke or the nipple.

The standard twelve-spoke rim made by the Standard Welding Co., is used. The hub flanges are steel stampings, the outer flange being cup shaped to receive the bearing. The inner face of both flanges is slightly tapered to conform to the taper of the spoke butt, so that as the spoke is drawn outward by the turning of the nipple, the spoke butt is wedged the more tightly between the flanges. Each alternate spoke is bolted through both flanges.

In general appearance the wheel resembles an ordinary wood artillery pattern wheel, the

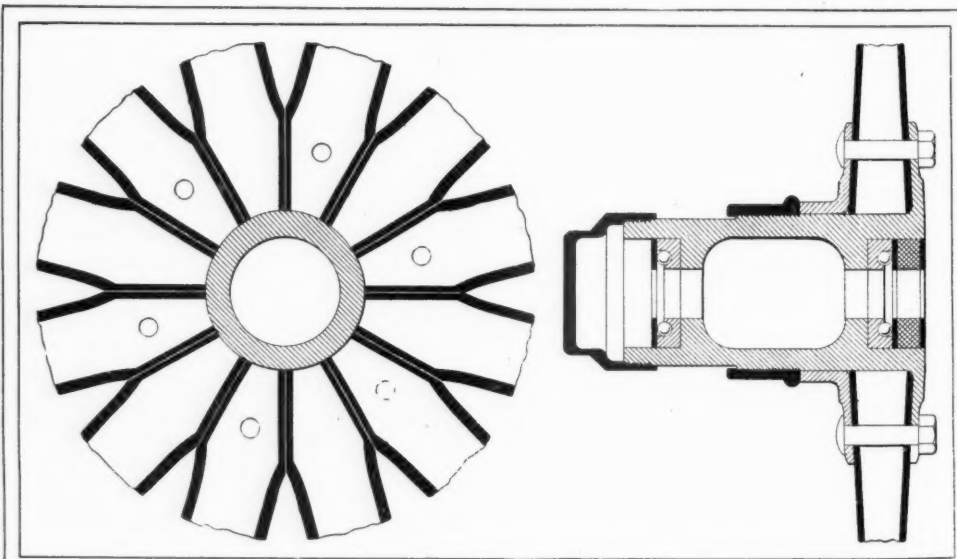


MOTOR AGE The Branch Accelerator

most noticeable difference being that the spokes are smaller than the ordinary wood spoke. It is said one of these wheels, weighing 25 pounds, was recently subjected to a vertical pressure of 9 tons without in any way fracturing or bending either spoke or rim. In event of an unusually severe shock, in which a spoke might be broken or a rim bent out of shape, the wheel may be taken apart and a spoke replaced. This is done by removing the inner flange and unscrewing the nipple that holds the spoke. A light tap will then be sufficient to separate the spoke to be removed from the others. There is no brazing in the wheel.

The wheels are furnished to order with any type of bearing and with any standard rim section. They are made in three different weights to suit different requirements. The weight is only a trifle more than that of a corresponding wood wheel. It is claimed that the spokes will not become loose so as to rattle, and that there is no tendency toward warping. The wheel is furnished bright and smooth and little work is required to prepare it for finishing. If desired, a high finish may be produced by baking the enamel on.

The company has recently installed new heavy presses and other equipment, which will enable it to produce the wheels in large quantities. For those who do not wish a steel wheel, the company will furnish its stamped flanges in connection with any pattern of bearing on the market, so that a manufacturer may have his own wheels "filled." A pressed metal frame will also form part of the Parish & Bingham Co.'s line.



MOTOR AGE

The Parish & Bingham Tubular Steel Wheel

THE NEW RAMBLER

There will be eight Ramblers in the 1904 line of Thomas B. Jeffrey & Co., of Kenosha, Wis. Models E and F are the same as those of this season, being the regular single-seat car, respectively, with and without top. The others are new. Model G is a single-seat machine, similar to the Model E in power, with 5 by 6-inch engine, with a honey-comb radiator in the front of a square metal bonnet with polished brass side wings and trimming. The gasoline tank will be under cover in the rear of the carriage, making the carriage lines clean. The wheel base will be 78 inches. The car will be equipped with wheel steering. Model H is the same as Model G, but with tonneau.

Model J will be a two-cylinder carriage, each cylinder being 5 by 6 inches. It will have a wheel base of about 84 inches, with a square bonnet and honey-comb radiator similar to Model G. The engine will be similar to that previously used, strengthened to sustain the double power, and its power is said to be conservatively estimated to be 14 brake horsepower. Model K will be a similar machine to Model J, but with the addition of a tonneau.

Model L will be the "edition de luxe." It will be similar to the Model K, but with canopy top, rubber side curtains, beveled plate glass swinging front, brass side lamps, gas headlight, tail light, brass tube horn and two willow baskets. The remaining model will be a delivery wagon. The specifications of this carriage will be practically the same as those of the Model G; in fact it will be that carriage, less the seat, with a delivery top added.

DIAMOND TIRE CHANGES

Several important changes have been made in the construction of the 1904 Diamond double tube, detachable automobile tire, made by the Diamond Rubber Co., of Akron, O. Points of weakness in the 1903 tire, as determined by service tests, have been re-inforced, in the inner tubing as well as in the outer casing. A change more apparent is the adoption of a new lug. This lug is rubber instead of leather covered, the intention in the change being to render the tire waterproof and to prevent the chafing common with the leather covered lug. The new lug can be used on tires of all sizes, thus obviating the necessity of the sixteen different sizes previously required.

MOTOR PATENTS REVIEWED

TWIN-CYLINDER MOTOR

Letters patent No. 745,422, dated December 1, Charles R. Dallenbach, of Parkgate, Pa., assignor to H. C. Fricke, J. J. Flannery and G. E. Turner, of Pittsburg, Pa., and J. M. Flannery, of Braddock, Pa.—Claim 1—The combination in an explosive engine, of two cylinders, and pistons arranged therein, and connected together; one of the cylinders being divided by its piston into an expansion chamber and a compression chamber, and the other cylinder having an expansion chamber between its head and piston, an exhaust-passage connected with the expansion chamber of the last mentioned cylinder, a passage connecting the two expansion chambers, a passage intermediate of the expansion chamber and compression chamber of the first mentioned cylinder, having a port for the admission of gas or gasoline, and a passage connected with the expansion chamber of the first mentioned cylinder for supplying said chamber with fluid pressure. Claim 12—In an explosive engine, the combination with two cylinders provided with a passage connecting the clearance spaces thereof, one of said cylinders being provided with a fuel inlet port and with an auxiliary port having a lead over the inlet port, the other cylinder being provided with an exhaust port having a lead over the said auxiliary port an auxiliary compression chamber for each cylinder, pistons in said cylinders separating the explosion chambers thereof from their respective auxiliary compression chambers, said pistons being connected to move synchronously, a connection between said inlet port and one of said compression chambers, a connection between said auxiliary port and the other compression chamber and means for supplying air to said compression chambers.

Letters patent No. 745,423, dated December 1. Same inventor and assignees.—Claim 1—An explosive engine comprising two cylinders, and pistons therein; the cylinders having expansion chambers between their heads and the pistons, and the pistons being connected to move synchronously, a passage connecting the two chambers, a passage connected with one chamber for supplying the same with fluid pressure, a passage connected with the said chamber for supplying the same with fuel under pressure, a relief valve connected to the other chamber, mechanism operated by the engine for operating said relief valve, and means for varying the time of closing said valve.

IGNITION OBSERVATION

Letters patent No. 745,465, dated December 1. Elihu Thomson, of Swampscott, Mass.—Claim 1—In combination, a chamber in which a gas burns explosively, a firing device located within the chamber, and a plate made up of fused silica that has thickened edges and a thin transparent arched portion through which the explosive action within the chamber can be observed. Claim 2—A spark plug for a gas engine, comprising a plate of fused silica having a thin transparent portion, and a sparking terminal passing through said plate and terminating in line with said thin portion. Claim 3—The combination with a gas engine of an inwardly arched plate of fused silica in

a hole in its cylinder wall, and a sparking terminal supported in said plate in line with said transparent portion.

HORIZONTAL FLY WHEEL

Letters patent No. 745,441, dated December 1. Edouard Hospitalier, of Paris, France.—Claim—In combination, a motor car, a vertical shaft, a bearing in which said shaft is supported, a horizontal fly wheel hung on the lower extremity of said shaft by means of a flexible joint, a gear on said shaft, a horizontal shaft provided with a gear meshing with the first named gear, the motor carried by said car and means for operatively connecting said horizontal shaft with said motor.

CAR REPAIR STAND

Letters patent No. 745,545, dated December 1.—William R. Webb, of London, England.—Claim 1—Apparatus for raising carriages and motor road vehicles comprising a cradle or frame mounted upon rockers so that it can be tilted, and blocks adapted to be placed alternately under the opposite ends of the rockers. Claim 2—Apparatus for raising carriages and motor road vehicles comprising a pair of rails upon which the carriage or other vehicle is run, means for adjusting the gage of the rails, means for securing the carriage on the rails, rockers which are secured to the rails and upon which they can be rocked by means of handles, and blocks adapted to be inserted alternately under the opposite ends of the rockers.

HORIZONTAL RADIATOR

Letters patent No. 745,654, dated December 1. Ransom E. Olds, of Detroit, Mich., assignor to the Olds Motor Works, of Detroit, Mich.—Claim 1—In combination with a vehicle having a horizontally disposed footboard, a motor on said vehicle, and means for cooling said motor, including a horizontally-arranged radiator directly beneath and parallel to the footboard, and a dashboard on said vehicle extending downwardly and rearwardly and terminating at a point substantially in horizontal alinement with the forward edge of the radiator and deflecting currents of air to said radiator. Claim 2—In combination with a vehicle having a horizontally-disposed footboard, a motor on said vehicle, and means for cooling said motor, including a radiator composed of horizontally-disposed superposed sections arranged directly beneath and parallel to the footboard, said superposed sections being slightly separated, and a dashboard on said vehicle extending downwardly and rearwardly and terminating at a point substantially in horizontal alinement with the forward opening of the space between the sections of the radiator to deflect currents of air into said space.

MOTOR CAR SPRINGS

Letters patent No. 745,809, dated December 1. Fay O. Farwell, of Dubuque, Iowa, assignor of one-half to the Adams Co., of Dubuque, Iowa.—Claim 1—A compound spring for vehicles and the like consisting of a series of spring components forming a unitary structure, provided with means for increasing or diminishing the effective power of said spring by including or excluding one or more of said spring components in or from active co-opera-

tion with the spring structure. Claim 5—A compound spring for vehicles and the like, comprising a series of co-operating leaves, connected together at their middle portions, one or more of said leaves having ends tending to move away from the body of said spring and thereby diminish the effective power of said spring, and shackles adapted to bind said leaf ends to the body of the spring to increase the power of said spring. Claim 6—A compound spring for vehicles and the like, comprising a regular leaf or leaves, an additional leaf or leaves connected with but normally inoperative with respect to the other leaves, and means for operatively connecting the additional leaf or leaves to main leaf or leaves to increase the effective power of the spring.

RECENT INCORPORATIONS

The Automobile Transit Co., Philadelphia, Pa.; capital stock, \$200,000. Incorporators, Fred J. Belasco, H. H. Hart, John Morrissey, Ralph Freidman, E. D. Price, M. E. Mayer, A. E. Brooke-Ridley, Dan Einstein and H. H. Davis. The company will buy, sell and rent automobiles.

The Jennings Automobile & Mfg. Co., of Jersey City, N. J.; capital stock, \$500,000. Incorporators, John J. Curtis, Jr., Russell Bonnell and E. W. Ward.

The C. G. Norton Co., of Milwaukee, Wis.; capital stock, \$50,000; to conduct a general automobile business. Incorporators, C. G. Norton, G. F. Discher and Harry M. Hannermann.

Auto Import Co., of New York; capital stock, \$60,000. Incorporators, M. S. Hamburger, R. E. D'Orville and H. M. Wise.

Arlington Heights Automobile Co., of Fort Worth, Texas; capital stock, \$3,500; to conduct an automobile stage line between Fort Worth and Arlington Heights. Incorporators: A. T. Byers, C. S. Mattison, William Bryce, W. R. Sanguinet and Robert M. Cart, all of Fort Worth.

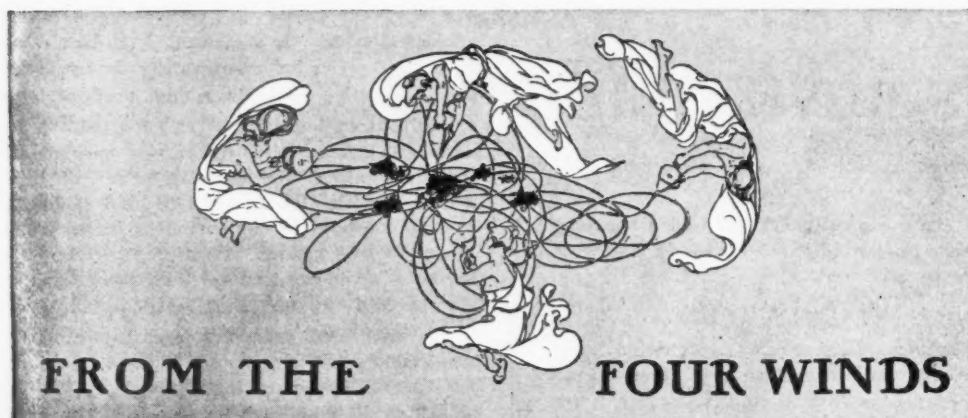
Monarch Railway Car Co., of Augusta, Me.; capital stock, \$2,000,000; half common and half preferred; to manufacture cars and automobiles.

The Centaur Motor Co., of Buffalo, N. Y.; capital stock, \$100,000.

LEGGETT COMPANY LIQUIDATES

Syracuse, N. Y., Dec. 8—The directors of the J. S. Leggett Manufacturing Co. have decided to liquidate and retire from the automobile business. J. S. Leggett tendered his resignation as president and general manager and Forest G. Weeks was elected in his stead for the purpose of winding up the affairs of the corporation. The company will pay all liabilities and will simply retire. Mr. Leggett said: "I tendered my resignation because we could not get sufficient capital paid in to make the trust large enough to be profitable." Mr. Leggett was originally engaged in the manufacture of carriages. About a year ago a company was organized with \$100,000 capitalization, to manufacture automobiles. The name Iroquois was adopted for the machine, which gave satisfaction, but only a few were made. The company has occupied a large building in South State street and has considerable machinery and a few cars on hand. Mr. Leggett may go into the automobile business in another city, as he has had two propositions from people wishing to form a company and manufacture.

C. S. Henshaw, New England representative of the E. R. Thomas Motor Co., of Buffalo, N. Y., has started for a trip through the New England states, calling on the automobile trade.



AUTOMOBILE HUNTING

Syracuse, N. Y., Dec. 7.—Partridge shooting in an automobile is the latest amusement of up-to-date Syracuse owners of motor cars. One day last week John Wilkinson, chief engineer of the H. H. Franklin Mfg. Co., Herbert Carhart and J. A. Seitz arose at 5 a. m. so as to get an early start for Hastings, N. Y., famous as partridge grounds. They took along their guns, a pointer and setter and started out over the rough and hilly roads to the edge of the Adirondacks. Their first stop was made near a farm house on a side road near Hastings. To their surprise a hospitable farmer rushed out with a pot of coffee and made each one drink a cup of the warming beverage. With some sandwiches which they had, this constituted their breakfast.

After breakfast the hunting began, and lasted until noon, when the party built a fire and cooked some food which they took along with them. The men resumed the shooting and by night had a splendid bag of partridges to bring home. Although the roads were sandy and hilly the 24-horsepower car was driven home, a distance of 37 miles, in 2 hours. The only accident was a puncture, which was soon mended.

LEGISLATIVE JOKE

Automobilists and the public generally are more inclined to laugh at than take seriously the following advertisement, inserted one day this week in the personal columns of several of the New York morning papers:

Any one injured through the carelessness of automobile chauffeurs, or next-of-kin of any persons killed through automobile accidents during the past 3 years, kindly send address to undersigned; the object not being litigation, but legislation, to the end that human life be spared from the recklessness of those who place so small a value upon the life and limb of others.—EMANUEL FRIEND.

Emanuel—better known as "Manny"—Friend, is a notoriety seeking criminal lawyer long prominent in "causes celebre," having to do with divorce, theatrical and sensational murder legislation. Whether "Manny" is seeking personal advertisement, looking for automobile accident damage cases, has really developed motophobia, or has the clientage of some body of citizens seeking even more drastic anti-automobile legislation does not appear. Interviewed on the subject "Manny" takes himself and the movement he threatens to inaugurate seriously. No one else does.

COMING AND GOING

While driving to the Paris prefecture where he was to pass the examination before receiving his driver's license, a Paris motorist was stopped by a policeman, who asked him to show his permit to drive. "Haven't got it yet. You see, I'm just on the way to the prefecture to

pass my examination to get it," said the driver. "See, here's the letter I have received from the prefecture telling me to come and take the examination."

The policeman did not look at the letter which the budding motorist displayed, but simply replied:

"That has nothing to do with me. All you had to do was to go on foot. You are arrested."

In another instance a policeman stopped a car quite late in the evening on the boulevard.

"Your permit, sir."

"Haven't got one yet. I am only learning to drive and when I know enough about it I will take the examination."

"Nonsense; no permit, no driving. You are arrested."

Moral—If you cannot learn how to drive how can you get a license, and if you have no license how can you learn to drive?

MOTOR MISCELLANY

Frank and D. H. Blakeney have opened an automobile livery barn at Falls City, Neb.

Hotel Euclid at Cleveland, O., has been appointed an official hotel of the American Motor League.

Fire Chief Sullivan of San Francisco, Cal., now has an automobile which will be used to respond to fire alarms.

A motor cycle with wheel steering gear will be placed on the market next season by the Great Western Mfg. Co., of La Porte, Ind.

The Pioneer Automobile Co., of San Francisco, Cal., has sold ten 1904 Wintons. The last order was from L. C. Rowell, who sold his 1903 car to Dr. H. Nelson Jackson for the latter's transcontinental trip.

An effort is being made to form an automobile club among the owners of cars at Dallas, Tex. A committee consisting of George A. Titterington, Henry Garrett, George A. Collins and A. Templeton, has been named to attend to the preliminary details of the organization.

E. R. De Yoe, of Wellington, Kan., recently covered the rural mail route for C. L. Clayton, of that town, with an Oldsmobile. The round trip was made in less than half the time required by horses, and the rural carriers are now considering the permanent adoption of the motor car.

John Fry, formerly with the Chicago branch of the Winton Motor Carriage Co., is now at the factory of the Electric Vehicle Co., Hartford, Conn., where he will spend some weeks studying the mechanical details

of the company's cars. After the first of the new year he will be with the Chicago branch of the Electric Vehicle Co.

The Post & Lester Co., Hartford, Conn., is the sole American distributor of the Volier French horn which is "the horn that made French horns famous," according to the catalogue.

A reader of MOTOR AGE was responsible for the artistic execution of the catchy poster of the Hartford Rubber Works Co., of Hartford, Conn., announcement of whose issuance was made recently in MOTOR AGE. Henry S. Eddy, of Sewaren, N. J., is the artist and he says he would rather draw pictures of automobile girls than go automobiling.

A clear record for the year of absolutely no accidents is claimed by Frank Fuller, the driver of the Peerless motor car belonging to D. S. Dodge, of Phelps & Dodge, of New York. The car has been driven 7,200 miles in the states of Vermont, Rhode Island, Massachusetts, Connecticut and New York, and it has cost nothing for repairs.

The catalogue of dry batteries and electrical novelties issued by the Electric Contract Co., 202 Center street, New York, contains much of interest to automobilists. The electric lamps described will be found useful, not only when tinkering around the car on dark nights, but on many other occasions. The company is also agent for the Williams spark coils.

The state department at Washington has instructed certain consular officers to prepare detailed reports regarding any experiments that have been made within their respective districts in the cultivation of the Para rubber tree. The information is desired for the benefit of certain parties who are seeking to build up the rubber-growing industry in the Philippine Islands.

The latest edition of the machinists' tool catalogue issued by the Brown & Sharpe Mfg. Co. of Providence, R. I., describes the product of the small tool department, and also gives a number of tables and other data that is of convenience to the machinist. Several new tools have been added during the past year, among them being a new clamping device for the micrometer caliper.

By reason of a recent decision of the commissioner of patents, wherein interference proceedings in connection with the registration of a trademark were annulled, attention has again been called to the fact that a trademark right cannot be transferred as an absolute right. It cannot be sold apart from the article upon which it is used, the reason being that such a transfer would be productive of fraud upon the public.



MOTOR AGE

Syracuse Hunting Party

The non-stop run of the Scottish Automobile Club for 1904 from Glasgow to London has been fixed for May 19 and 20.

The automobilists of Phoenix, Ariz., have organized a club with Dr. H. E. Stoud president, and Irving H. Andrews secretary.

Hon. C. S. Rolls will read a paper on the Commercial Aspects of Automobilmism before the London Chamber of Commerce next January.

H. D. Ryus, formerly manager of the White garage in San Francisco, has taken charge of the new White automobile repository in Los Angeles.

To prevent mist gathering on motor goggles they should be lightly rubbed with a clean rag on which is a small quantity of glycerine.

The automobile repair shop and storage barn of F. E. Avery, of Columbus, O., was burned last week, with a total loss of about \$30,000. Twenty-five automobiles were destroyed.

The city council of Springfield, Ill., has passed an ordinance fixing the license fee for automobiles at \$5 per annum, and limiting the rate of speed to 12 miles an hour.

A good medium for straining gasoline is said to be the best quality chamois skin. This skin will stop dirt and water and will at the same time permit the gasoline to pass through without material delay.

The price of the Ford car, made by the Ford Motor Co., of Detroit, Mich., will be advanced \$50 next season owing to the increased cost of materials. This will make the price \$800, and \$900 with tonneau.

Interest in automobiling in Sacramento, Cal., has increased wonderfully during the past month, and the Sacramento Automobile Club is growing rapidly. There are now about fifty automobiles in the city.

A runabout touring car called the La Pointe Simplex, is reported to be in course of construction at the Hodge Iron Works at Sault Ste. Marie, Mich. It will be ready for use about the first of January.

The Grout Bros. Automobile Co. has leased the building at 151 Columbus avenue, Boston, which will be refitted for the Boston office, and the 1904 models of the steam tonneaus and runabouts will be displayed there.

Chanute, Kan., rejoices over the fact that it has two automobiles, and the owners are discussing the advisability of organizing a club. They contend that in union there is strength, and they believe that the organization can do much to help the good roads cause and that perhaps legislation in other ways can be influenced. The only difficulty is that there would not be enough members to fill the offices unless they doubled up considerably. The solution

seems to be that more of the residents buy motor cars and help fill the yawning chasm.

The final dividend of 1.2 per cent has been declared by Referee C. H. Ruhl, of the bankrupt Steam Vehicle Co. of America, of Reading, Pa. This dividend was paid December 5. The first dividend was 30 per cent. The claims amounted to \$23,000.

The advertising department of the Chicago & Alton railway issues a book with a number of half-tone views of flood scenes along the road during the past year. The title is "The Flood of 1903," and the book is dedicated to the ticket agents throughout the country.

The H. L. Hoffman Motor Co., of 30 West Randolph street, Chicago, is now in a position to furnish the trade with single-cylinder vertical motors of 4 and 6-horsepower; double-cylinder vertical motors of 8 and 14-horsepower and four-cylinder vertical motors of 16, 28, 40 and 80-horsepower.

The 1904 catalogue of the Tinken Roller Bearing Axle Co., of Canton, O., is now ready to mail to manufacturers. Besides describing

The company is increasing its passenger service by adding to it a carload of Santos Dumonts and a Fredonia touring car.

Pedro Diaz, a nephew of President Diaz, of the Republic of Mexico, has instituted proceedings for the recovery of \$1,000 alleged to have been paid by him to the Conrad Motor Co., of Buffalo, for the sale to him of an automobile. He has filed a petition with the trustee in bankruptcy asking that his money be returned, as the automobile was never delivered. He claims that the officials of the company knew the concern was insolvent when they took his money.

Two automobiles, the property of Claude Sintz and Guy L. Sintz, automobile manufacturers of Grand Rapids, Mich., were seized last Friday at Buffalo, N. Y., by a deputy sheriff on a writ of attachment issued by Judge Kenefick, of the supreme court. D. W. Henry, who secured the writ, is suing the Sintz company to recover a sum of money which he alleged is due him as commission on the sale of automobiles for them. The two cars had been shipped to a Buffalo automobile dealer.

S. R. Kremer, of Dayton, O., recently rode from Cleveland to Dayton, O., on a 2½-horsepower Thomas motor cycle, making an average of 19 miles an hour over sandy and crushed stone roads. The trip of 228 miles was made in 12 hours actual riding time, 2 gallons and 1 pint of gasoline being used. Some trouble was experienced with the rear tire, and after repairing it three times, the last 15 miles were ridden on a flat tire.

In the 1904 catalogue of the Fredonia Mfg. Co., of Youngstown, O., the company dwells with evident pride on the fact that its automobiles are

built to negotiate the roads of northeastern Ohio, which are described as execrable, muddy, stony and hilly. The difficulties encountered by the Fredonia car in the endurance run and the manner in which they were overcome is also made the text for effective argument for the car.

The Hopkins Bros. Co., of Des Moines, Ia., will increase its automobile business next season, and has secured a two-story building 44 by 70 feet, which will be used as an automobile salesroom. D. F. Hopkins will have charge of this department.

A millionaire's wife in Los Angeles tried to induce Barney Oldfield to take her with him on his car while he was trying to establish new records. Oldfield, of course, promptly refused for several reasons, among them being that the rules would not permit it, and another that he did not care to risk her life. When smiles and entreaties failed to win Oldfield's consent, the lady pulled a \$5 bill from her purse and sought to gain his permission, but he was obdurate even to this magnificent sum. This story is not guaranteed.



MOTOR AGE.

Miss Maude Leroy, of the Weber & Field Company in Her Haynes-Apperson

the principle, construction and material of the roller bearings, the book contains testimonial letters from several automobile manufacturers who have used the bearings on their machines.

The Automobile Club of Great Britain has officially recognized the record made at Welbeck by the Hon. S. C. Rolls on a 110-horsepower Mors and entered it on the record book. The time made was 26½ seconds, equal to 86.68 miles an hour. The record is not an official world's record, because the course is not a dead level.

Colonel William C. Greene, the La Canala copper king, is about to undertake to drive from La Canala, Mexico, to San Francisco, Cal., with his recently imported French car. He will go first to Tucson, Ariz., and then to Phoenix. From this place he will go on the Yuma road to California.

The Mobile Carriage Co., of San Francisco, Cal., last week received a carload of Pierce Arrows and Stanhopes, a carload of Santos Dumonts and a carload of Northern runabouts.

AMERICAN MOTOR LEAGUE OFFICIAL BULLETIN

ISAAC B. POTTER, Pres., Potter Bldg., New York
CHAS. E. DURYEA, 1st Vice-Pres., Reading, Pa.
W. GRANT MURRAY, 2d Vice-Pres., Adrian, Mich.

—: OFFICERS:—

S. W. MERRIHEW, 3d Vice-Pres., 154 Nassau St., New York
ROBERT L. STILLSON, Sec'y, 150 Nassau St., New York
FREDERICK B. HILL, Treas., 32 Binford St., Boston

CHAIRMAN OF NATIONAL COMMITTEES:

LEGISLATION.....George R. Bidwell, New York, N. Y.	MEMBERSHIP.....Frank A. Egan, New York, N. Y.
ROAD IMPROVEMENT.....R. E. Olds, Lansing, Mich.	SIGN BOARDS.....John B. Price, Hazleton, Pa.
LOCAL ORGANIZATION.....Charles F. Potter, Denver, Colo.	RACING.....A. G. Batchelder, New York, N. Y.
TOURING.....W. H. Baker, Buffalo, N. Y.	PRESS.....Joseph Estoclet, Philadelphia, Pa.
TECHNICS.....Charles E. Duryea, Reading, Pa.	HOTELS.....Francis N. Bain, Newburg, N. Y.

NATIONAL HEADQUARTERS, 150 NASSAU STREET, NEW YORK

COMMITTEE APPOINTMENTS

Augustus Post, of New York, and Robert Bruce, of Clinton, N. Y., have been appointed members of the national committee on touring. Mr. Post is a member of the banking firm of E. D. Shepard & Co., and will bring to the work of the committee the enthusiasm of an experienced tourist and much valuable information acquired by him in his various automobile trips throughout the country. Mr. Bruce is a well known editorial writer and correspondent and has covered many thousands of miles of American roads for the specific purpose of describing accurately the most attractive routes and tours. He is equipped with recorded information and his acceptance of a place on this committee, as well as that of Mr. Post, may well be a source of congratulation to league members.

Henry Souther, of Hartford, Conn., has been appointed a member of the national committee on technics. Mr. Souther's high standing and experience as an expert mechanical engineer and his knowledge of the mechanics of the motor car have made him so well known among the makers and users of automobiles that nothing need be said to justify his selection for a place on this committee.

LISTS WANTED

Some weeks ago the league requested its members to send lists of names and addresses of automobilists to headquarters. That request received a very substantial response and is now repeated. The secretary desires especially to receive lists of motor car users in Pennsylvania, Maryland, Illinois, Indiana and the middle west. The number of automobilists is increasing very rapidly and the league intends that its recruiting work shall keep pace with the procession.

MEMBERSHIP RENEWALS

It has been a source of wonder to many original members of the league that they have not been called upon to renew their memberships. It is not from oversight that this was not done, but rather for a distinctive purpose. The officers of the league have intended to prove the usefulness and earnest purpose of the organization before asking that renewals be sent in. We feel that that policy has fairly worked out its results, and the request is now made of each member who joined more than a year ago, to send his renewal fee—\$2—to the secretary, 150 Nassau street, New York.

NATIONAL ASSEMBLY

The league will hold a national assembly in New York, beginning on January 19, 1904, which day will be devoted entirely to the subject of good roads. All members of the league are invited to be present. It will give them all the best opportunity in the world to become acquainted with one another and to exchange

views on subjects of mutual concern. Good speakers will be present and the occasion will be made as interesting as possible. The full program of exercises will be announced later, and notice will be sent to each member and printed in these columns. On the second day of the meeting reports of committees will be read, officers elected and the business routine of the assembly taken up. The automobile show at Madison Square Garden will be held the same week, and an opportunity will thus be given to league members to visit the show and attend the national assembly at the same time.

AUTOMOBILE CLUBS

A visitor from an Eastern city called at headquarters last week and said among other things: "I would give a thousand bushels of

have been different. Give a man something to do in a good cause and he becomes a part of it. After all, the board of consuls is the real solution.

CONSULS

The work of some league consuls is splendid and no words can express the appreciation with which it is regarded by the officers of the league. The work of recruiting is the immediate and important work for all. Effective recruiting is not done by a miscellaneous distribution of league literature, but by a direct and persistent personal request brought home to every man whose duty it is to join the organization. Every member should do something toward enlarging the list and the secretary will be glad to send to each member a number of application blanks upon request. The league is today the largest organization of individual automobilists in the United States, and probably in the world; but it is not nearly large enough to accomplish all the purposes for which it was formed. The league has room for more members on its pioneer list. Write to the secretary.

ROAD AND GUIDE BOOKS

The touring committee is at work and nine road books are in prospect for next year. Three for New York, eastern, middle and western; one for Massachusetts, Rhode Island and Connecticut; one for Pennsylvania, possibly two; one for New Jersey; one for Ohio; one for Illinois and one for Maryland, the District of Columbia and Virginia. The league will extend its work of making road books into other states as fast as members volunteer to send in the necessary information. Books now in use are in many respects unreliable and out-of-date. Reliable data are easily put together and the work of recording an attractive or interesting route is one of the most fascinating that can be undertaken. Try it, send to the secretary all the information you have and all the reliable maps you can spare, relating to the roads and routes in your locality. He will assort and arrange it and place it in the hands of the proper committee. Members who are willing to undertake this work in their respective states will be placed on the list of special road book committees and those rendering good service will be recommended for places on the permanent official list as fast as state divisions are formed.

MERELY PERSONAL

The rapid and substantial success of the American Motor League has brought to its headquarters many letters of a kind, appreciative and congratulatory sort, and like all words of encouragement, they do much to stimulate the work of its officers who do not always find time to acknowledge these letters by separate answers and who therefore express their thanks through the medium of this page.

THE AMERICAN MOTOR LEAGUE

is an organization to promote the interests of all users of motor vehicles; to ascertain, protect and defend their rights; to oppose and prevent the enactment of unreasonable and oppressive laws; to encourage the use of motor vehicles by agitation and instruction; to provide its members with printed routes, maps and guide books by which touring may be facilitated and encouraged; to promote the work of improving the public roads and the erection of proper guide boards, and other signs necessary to guide and warn the users of motor vehicles; to select and appoint official hotels, repair shops and supply stations where its members may obtain reliable service at reasonable rates.

WHO MAY BECOME A MEMBER

"Any man or woman, 18 years of age or over, of good moral character and respectable standing, friendly to the motor vehicle and its interests, shall be eligible to membership."

(Constitution, Article 2, Section 1.)

The League is extending its membership in all parts of the country. We invite all friends of the movement to join and aid in building up a powerful organization.

NO INITIATION FEE. ANNUAL DUES \$2 IN ADVANCE, OR \$3, INCLUDING 1 YEAR'S SUBSCRIPTION TO MOTOR AGE.

union seed to any man who will tell me how to stir up an interest among the members of an automobile club." He is the secretary of such an organization and says he has tried every means within his knowledge to stimulate a feeling of interest and to induce members to come to the club house; that they do not attend the meetings, do not answer communications, do not attend to committee duties and do not appear to be aware that the club is in existence. In this particular case there has been no club meeting since January last. The reason of this indifference is not far to see. Had this club taken up an active campaign in behalf of any of the objects which are near to the heart of the automobilist and encouraged its members to go to work, the situation would

F.I.A.T.

FABRICA

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AUTOMOBILI

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AUTOMOBILES
and
AUTO SPEED
LAUNCHES

Our Marine Motors are used on the submarine torpedo boats and warship tenders of the Italian Navy.



Silence Simplicity and Reliability



Our Automobiles are used by the Postal and Customs Departments of Italy, Spain and Portugal.

*"The
Machine
with
a
Brain"*

**PRESSURE
ON THE
FOOT PEDAL
CONTROLS
EVERY
FUNCTION
OF
THE MOTOR**

AWARDS:

Treviso, 1899, Gold Medal.
Turin, 1900. Ministry of Industry and Commerce Gold Medal. Italian Automobile Club Gold Medal.
Asti, 1900. Ministry of Industry and Commerce Gold Medal. "Gazzetta dello Sports" Gold Medal.
Asti, 1900. Gold Medal of the Exhibition. First Prize in the Speed Contests, etc.
Padua, 1900. Ministry of Industry and Commerce Great Gold Medal. Exhibition Gold Medal.
Padua, 1900. First Prize in the Speed Contests.
Brescia, 1900. Gold Medal Prize Cup. First Prize in the Speed Contests.

Turin, 1901. First Prize in the (Fuel) Consumption Contests.
Milan, 1901. First Prize at the International Automobiles Exhibition. Prize Cup given by H. M. the King of Italy.
Milan, 1901. Great Gold Medal.
Leghorn, 1901. First Prize in the Speed Contests.
Turin, 1902. First Prize for Hill-climbing Tests from Sassi to Superga. Cup presented by the Duke of the Abruzzi.
Turin, 1902. First Prizes in the Hill-climbing Tests between Susa and Mont Conis. First Challenge Cup presented by Prince Amedeo.

Turin, 1902. Great National Cup.
Turin, 1902. Diploma of Honour at the International Automobiles Exhibition.
Lisbon, 1902. First Prize at the Race between Figueira and Lisbon.
Padua, 1902. First Prize at the Speed Test.
Conegliano, 1902. First Prize at the Race with Alcohol Motors and for (Fuel) Consumption.
Florence, 1903. First Prize 70 H. P. Panhard. Second, Third and Fourth Prizes, 24 H. P. F. I. A. T. 15 Kil. Hill-climb.
Circle d'Ardennes, 1903. Third Prize, 24 H. P. F. I. A. T.

HOLLANDER & TANGEMAN

Sole American Agents

1904

5 W. 45th Street, New York

Head and Shoulders Above All Others

In practically every line of manufacture there is one article or brand which, by reason of its superiority, stands out more prominently than others.

In the rim making industry,

Standard Rims

have been leaders, have stood head and shoulders above all others from the beginning.

Their superior durability, accuracy and general excellence have won for them a distinct position in the rim making world, and have made them favorites with the country's largest and most critical rim buyers.

Every Standard Rim is guaranteed perfect, and bears the Tire Maker's Official Inspection Stamp.

There are no Standard "seconds"—rejected rims, though few, are *always* destroyed. We prefer to stand the loss rather than risk our reputation.

To manufacturers of automobiles, Standard Rims mean the strengthening and general improvement of their machines, with a consequent increase in sales.

To Dealers they mean a bigger, better business, because of the increased prestige they give to machines fitted with them.

To Riders they mean protection from vexatious delays, and the numerous tire troubles directly traceable to "cheap" rims.

**The Standard Welding Company,
Cleveland, Ohio**

The Peculiar Excellence of
Construction of
American Dunlop Tires

**Automo-
biles
Carriages**



**Motor-
bicycles
Bicycles**

has made them the choice of discriminating buyers the world over. Every detail has been worked out to the highest degree. Everything that enters into the tire is of selected material and subjected to the closest scrutiny in every process of manufacture, with the result that American Dunlop Tires have made a name of their own that is synonymous with tire perfection. Every wide-awake merchant in any land can profit himself and satisfy his customers by handling

AMERICAN DUNLOPS

Manufactured by

Hartford Rubber Works Company

Hartford, Connecticut, U. S. A.



Marvelous, Indeed!

Again the genuine detachable G & J Tires demonstrate they are the fastest and most reliable automobile tires in the world.

At Columbus, Ohio, July 4th, Barney Oldfield broke all existing records from one to ten miles, establishing a new table of world's records as follows:

OLDFIELD'S RECORD AT COLUMBUS, OHIO, JULY 4, 1903

1st mile	. 56 2-5	One Mile	. :56 2-5
2nd "	. 59	Two Miles	. 1:55 2-5
3rd "	. 59 3-5	Three Miles	. 2:55
4th "	. 1:00	Four Miles	. 3:55
5th "	. 59 3-5	Five Miles	. 4:54 3-5
6th "	. 59 3-5	Six Miles	. 5:54 1-5
7th "	. 1:01	Seven Miles	. 6:55 1-5
8th "	. 1:00	Eight Miles	. 7:55 1-5
9th "	. 59 3-5	Nine Miles	. 8:54 4-5
10th "	. 1:00	Ten Miles	. 9:54 4-5
TOTAL	. 9:54 4-5	Mile Average	. :59 4-5

INSIST ON

G & J TIRES

being fitted on your automobile.

They will be furnished by manufacturers and dealers everywhere.

G & J TIRE CO.

INDIANAPOLIS, IND.

NEW YORK AGENCY, 81 Reade Street, New York City.

NOTICE

USERS, AGENTS, IMPORTERS, DEALERS AND
MANUFACTURERS OF

Gasoline Automobiles

United States Letters Patent No. **549,160**, granted to George B. Selden, November 5, 1895, controls broadly all gasoline automobiles which are accepted as commercially practical. Licenses under this patent have been secured from the owners by the following named:—

MANUFACTURERS

Electric Vehicle Co.	Pope Motor Car Co.
The Winton Motor Carriage Co.	The J. Stevens Arms & Tool Co.
Packard Motor Car Co.	H. H. Franklin Mfg. Co.
Olds Motor Works	Charron, Girardot & Voigt Co. of
Knox Automobile Co.	America (Smith & Mabley)
The Haynes-Apperson Co.	The Commercial Motor Co.
The Autocar Co.	Berg Automobile Co.
The George N. Pierce Co.	Cadillac Automobile Co.
Apperson Bros. Automobile Co.	Northern Mfg. Co.
Searchmont Automobile Co.	Pope-Robinson Co.
Locomobile Co. of America	The Kirk Mfg. Co.
The Peerless Motor Car Co.	Elmore Mfg. Co.
U. S. Long Distance Automobile Co.	E. R. Thomas Motor Co.
Waltham Manufacturing Co.	Buffalo Gasoline Motor Co.
	The F. B. Stearns Co.

IMPORTERS

having licenses for the importation of all makes of foreign cars:

Charron, Girardot & Voigt Co. of	Standard Automobile Co.
America (Smith & Mabley)	E. B. Gallaher
Central Automobile Co.	

These manufacturers are pioneers in this industry and have commercialized the gasoline vehicle by many years of development and at great cost. They are the owners of upwards of four hundred United States Patents, covering many of the most important improvements and details of manufacture. Both the basic Selden patent and all other patents owned as aforesaid will be enforced against all infringers.

No other manufacturers or importers than the above are authorized to make or sell gasoline automobiles, and any person making, selling or using such machines made or sold by any unlicensed manufacturer will be liable to prosecution for infringement.

A suit was commenced on Oct. 22d against a dealer, and against a manufacturer infringing United States Letters Patent No. 549,160.

A suit was commenced Nov. 5th, against a purchaser and user of an automobile infringing the same patent.

Association of Licensed Automobile Mfrs.
No. 7 EAST 42d STREET, NEW YORK



The Oldsmobile

The usefulness of the Oldsmobile does not stop with the summer. Good roads or bad roads, fair weather or stormy, the Oldsmobile maintains its place as "the best thing on wheels."

All parts are covered, so that weather conditions never effect the strong and perfect mechanism. The driver is provided for by the detachable hood and storm apron that protects occupants and operating lever from snow, rain or wind.

Price \$650.00

Any of the following selling agents will show you the Oldsmobile Line:

Albany, N. Y.: Auto. Storage & Trading Co.
Alpena, Mich.: C. F. Steele.
Atlanta, Ga.: Oldsmobile Co.
Battle Creek, Mich.: Frank Palmer.
Binghamton, N. Y.: R. W. Whipple.
Boston, Mass.: Oldsmobile Co.
Buffalo, N. Y.: Jaynes Auto Co.
Charleston, S. C.: Army Cycle Co.
Charlotte, N. C.: O. L. Burringer.
Chicago, Ill.: Oldsmobile Co.
Cleveland, Ohio: Ohio Oldsmobile Co.
Columbia, S. C.: J. E. Richard.
Dallas, Tex.: Lipscomb & Garrett.
Davenport, Iowa: Mason's Carriage Works.
Detroit, Mich.: Oldsmobile Co.
Detroit, Mich.: Oldsmobile Company.
Erie, Pa.: Jacob Roth.
Grand Rapids, Mich.: Adams & Hart.
Greenville, S. C.: Bates-Tannahill Co.

Harrisburg, Pa.: Kline Cycle & Auto Co.
Houston, Tex.: Hawkins Auto. & Gas Engine Co.
Indianapolis, Ind.: Fisher Auto Co.
Jackson, Mich.: Lockwood Bros.
Jacksonville, Fla.: F. E. Gilbert.
Kansas City, Mo.: E. P. Moriarty & Co.
Knoxville, Tenn.: Rodgers & Co.
Lansing, Mich.: W. K. Prudden & Co.
Little Rock, Ark.: Arkansas Auto Co.
Los Angeles, Cal.: Oldsmobile Co.
Louisville, Ky.: Sutcliffe & Co.
Memphis, Tenn.: White & Williams.
Milwaukee, Wis.: Oldsmobile Co.
Minneapolis, Minn.: A. F. Chase & Co.
Muncy, Pa.: C. C. Worthington.
Nashville, Tenn.: John W. Chester Co.
Newark, N. J.: Autovehicle Co.
New Orleans, La.: Abbott Cycle Co.
New York City, N. Y.: Oldsmobile Co.

Omaha, Neb.: Olds Gas Engine Works.
Philadelphia, Pa.: Oldsmobile Co.
Pittsburg, Pa.: Banker Bros.
Plainfield, N. J.: F. L. C. Martin Auto Co.
Portland, Ore.: Merrill Cycle Co.
Poughkeepsie, N. Y.: John Van Benschoten.
Raleigh, N. C.: Raleigh Iron Works Co.
Rochester, N. Y.: Rochester Auto Co.
Saginaw, Mich.: A. W. Norris.
San Francisco, Cal.: Pioneer Auto Co.
Savannah, Ga.: T. A. Bryson.
South McAlester, I. T.: McIntyre & DeLong.
St. Louis, Mo.: Mississippi Valley Auto Co.
Syracuse, N. Y.: Syracuse Auto Co.
Texarkana, Ark.: Texarkana Auto & Repairing Co.
Tucson, Ariz.: F. Ronstadt.
Utica, N. Y.: C. H. Childs & Co.
Washington, D. C.: National Capital Auto Co.

LIST OF FOREIGN AGENTS.

Argentina Republic: Ramon Camano & Co., Buenos Ayres.
Australia: New South Wales: Knowles Auto. & Power Co., Ltd., Sydney.
Victoria: Hall & Warden, Melbourne.
Queensland: Jas. Smith & Sons, Brisbane.
South Australia: Duncan & Fraser, Adelaide.
West Australia: American Motor Car & Vehicle Co., Perth.
Austria: I. T. Risch, Vienna.
Belgium: Maurice Evenpoel & Co., Brussels.
Canada: Hyslop Brothers, Toronto.
Denmark: T. T. Nielsen & Co., Copenhagen.
France: Eugene Merville, Paris.
Germany: (Except Cologne): General-Vertrieb von Motorfahrzeugen, Berlin.
Germany (Cologne): L. Welter & Co., Cologne.
Great Britain and Ireland: Jarrott & Lettis, Ltd., London.
Hawaii: R. N. Halstead, Honolulu.
Holland: Bingham & Co., Rotterdam.

Italy: Victor Croizat, Turin.
Japan: Abenhelm Bros., Yokohama.
Mexico: Oldsmobile Co. (Mohler & Degress), Mexico City.
New Zealand: W. A. Ryan & Co., Ltd., Auckland.
Russia: Geo. Zemliczka & Co., Moscow.
Russia: John Platts & Co., Odessa.
Russia: Th. Tansky & Co., St. Petersburg.
Russia: Tadeusz Kowalski i A. Trylski, Warsaw.
South Africa: White, Ryan & Co., Cape Town.
South Africa: Sheriff, Swingley & Co., Johannesburg, Transvaal.
Switzerland: Automobile-Fabrik Orion A.-G., Zurich.
Tasmania: A. G. Webster & Son, Hobart.

GENERAL EXPORT AGENTS.

N. Y. Export & Import Co., New York.
Wm. E. Peck & Co., New York.

For complete information see our nearest selling agents or write direct to

OLDS MOTOR WORKS, 1300 Jefferson Avenue, DETROIT, MICH.

Member of the Association of Licensed Automobile Manufacturers.

EVERYBODY'S FAVORITE

\$750



\$850

(with tonneau.)

If you would have automobile satisfaction at a minimum of expense, get a **CADILLAC**. It is now possible to secure prompt delivery. The best part of the riding season is at hand. We will send you name of nearest Agent.

CADILLAC AUTOMOBILE COMPANY, - Detroit, Mich.



Are you tired of motor car experiments? Do you want constant, dependable service? Then get a

Peerless DIRECT DRIVE Motor Car

Our sales department records show that 80 per cent of Peerless owners have driven other cars before settling down to **permanent satisfaction with a PEERLESS.** Send for description of our new 24 and 35 h. p. 4-cylinder cars—**\$3,700 to \$6,000.**

Agencies in the Principal Cities.

Photogravure of "Peerless Girl II." shown herewith, 14x22 inches, suitable for framing, sent postpaid on receipt of ten cents.

PEERLESS MOTOR CAR COMPANY, Cleveland, Ohio, U. S. A.
Member Association Licensed Automobile Manufacturers

Our Chicago-New York Record Run and the New York-Pittsburg Endurance Run
Clearly Demonstrated the Superiority of

Columbia Gasoline Cars

We now wish to emphasize the fact that something happens every now and then
to demonstrate the superiority of

Columbia Electric Vehicles

For instance: October 27-28, 1903, a COLUMBIA Electric covered the distance of 249½ miles between New York City and Boston in 22 hours and 52 minutes, running time, beating the best previous record by hours.
Again: November 26, 1903, a COLUMBIA won the hill-climbing contest for electric vehicles at Eagle Rock, Orange, N. J., beating its nearest competitor up the mile grade by more than a minute.

Catalogue of 20 different Columbia Electric and Gasoline Automobiles
will be sent on request.

ELECTRIC VEHICLE CO., - Hartford, Conn.

New York Branch: 134-136-138 West 39th St.

Chicago Branch: 1413 Michigan Ave.

Boston Branch: 74-76-78 Stanhope St.

Member Licensed Association of Automobile Manufacturers.

The *Locomobile* Steam Car

PRINCE HENRY

of Prussia has just ordered another Locomobile Steam Car, being greatly satisfied with the one he has been using.



The Locomobile is the best automobile

IF YOU LIVE

in a hilly country and want a run-about, why not get a Locomobile? It's the only automobile that ever climbed Pike's Peak.

LONG WHEEL BASE RUNABOUT

125 Miles on Gasoline . . . A Very Desirable Car

Write for full information about the Steam Cars we manufacture

The Locomobile Company of America, Bridgeport, Conn.

MEMBER OF THE ASSOCIATION OF LICENSED AUTOMOBILE MANUFACTURERS

"IMPERIAL" Gasoline Automobiles

DOUBLE OPPOSED
AIR-COOLED MOTOR

ARE ALWAYS READY
THE HOTTEST DAYS OF SUMMER
THE COLDEST DAYS OF WINTER

BEVEL GEAR DRIVE
SLIDING GEAR TRANSMISSION

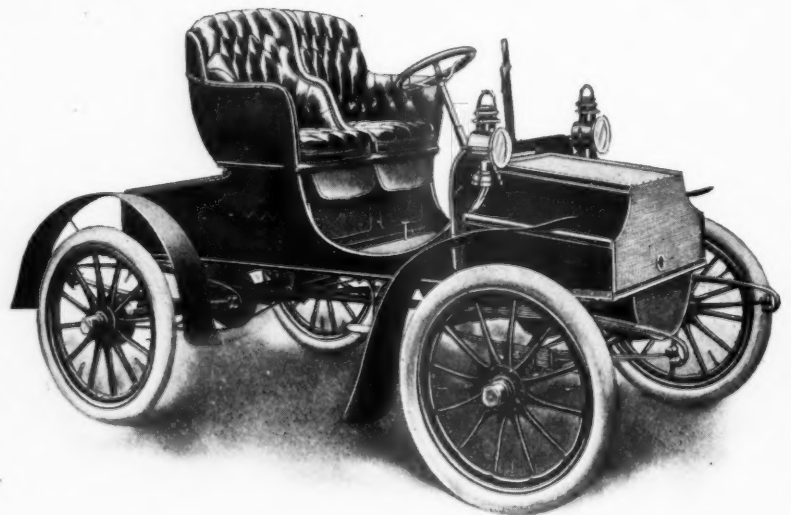
WE MANUFACTURE 4 DIFFERENT MODELS

- Model A. Open Runabout
- Model B. Runabout Furnished with Falling Top or Doctor's Top
- Model C. Delivery Wagon
- Model D. Full Glass Doctor's Car

All of which we will have on exhibition at the Fourth Annual Automobile Show in New York and the Third Annual Automobile Show in Chicago.

HAS ALL THE LATEST IMPROVEMENTS

Our "IMPERIAL" Automobiles are driven by double opposed air-cooled engines (no water, no radiator coils, no pump), placed in front, away from all dirt and dust. All parts accessible by simply lifting the hood. Has bevel gear drive instead of sprocket chain. Sliding gear transmission. Two brakes. Automatic spark timer. Forced feed oiler of large capacity. Tilting steering wheel. Our spring suspension we claim is the most practical and best ever shown on any automobile. Body of handsome design, roomy and comfortable, and with ample room back of seat for carrying a number of parcels. Upholstered in the finest quality of leather.



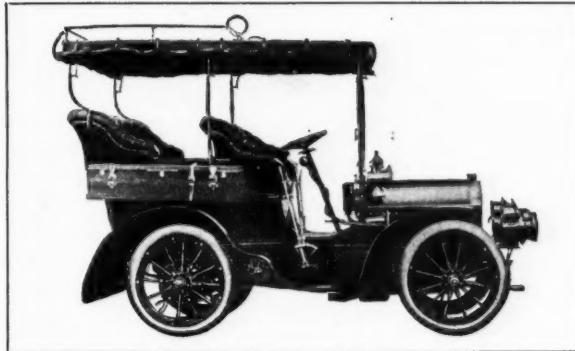
IMPERIAL MODEL "A"

AGENTS WANTED IN UNOCCUPIED TERRITORY
BOOKLET ON APPLICATION

RODGERS & CO., COLUMBUS, OHIO, U. S. A.

1904 *Locomobile* | Gasoline Touring Cars

A
TRUE
SIMPLEX



EASILY
THE BEST BUILT
CAR
IN AMERICA

A 1904 Four-Cylinder Touring Car with Cellular Radiator

We are taking many orders for our 1904 Gasoline Cars. Be sure and get YOUR order in early.
Preliminary folder now ready.

The Locomobile Company of America, BRIDGEPORT, CONN.

MEMBERS OF THE ASSOCIATION OF LICENSED AUTOMOBILE MANUFACTURERS.

"CREST AGENCIES CIRCLE THE GLOBE."

It will pay you to look up the merits of this popular car before placing your orders for 1904. The Crestmobile has more desirable features than can be found in any automobile manufactured, no matter what the price

\$750 FOR TWO PERSONS

A CAR built by manufacturers with years of experience in the Gas Engine business. The Crestmobile is an honest proposition from the ground up. The workmanship, finish and material is the best that money can buy. It has the size, appearance, power, durability and speed of expensive touring cars costing four times the price. Those are a few reasons why the Crest is the car for you

WRITE FOR CATALOGUE. DEPT. K.

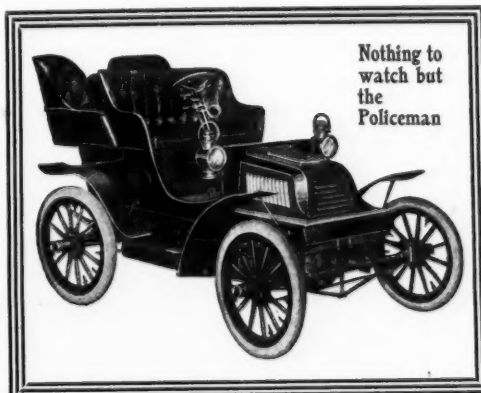
"THE CREST IS THE CAR FOR YOU."

We have retained many of our 1903 features with the following improvements: A much larger and more powerful motor—fan cooled, wider body, larger tonneau, option of 45 or 54 in. tread, lever or wheel steer, any color

\$850 FOR FOUR PERSONS

The vast amount of money spent in worthless experiments and the many complicated parts which go to make up the traditional type of automobile is spent in perfecting the smaller number of parts constituting the Crestmobile. The 1904 Crest is the simplest automobile made. No water supply to watch, no water pipes and jackets to freeze. Shaft drive. No chains to break or regulate

Nothing to watch but the Policeman



1904 CRESTMOBILE

CREST MAN'FG CO., CAMBRIDGE, MASS

CLASSIFICATION ... WHY? DISTINCTIVE

THE LIGHTEST
THE STRONGEST
MOST DURABLE
MOST EFFICIENT
BEST FINISHED



ABSOLUTELY SAFE
PERFECTLY CLEAN
BEST TO RIDE
MOST ECONOMICAL
TO KEEP

THE BAKER ELECTRIC

Attractive in Rich Finish and Design. ✱ Simply Manipulated. ✱ Always Satisfactory.
A Carriage Any Lady Can Drive.

SEND FOR OUR B K CATALOG.

THE BAKER MOTOR VEHICLE CO., Cleveland, Ohio

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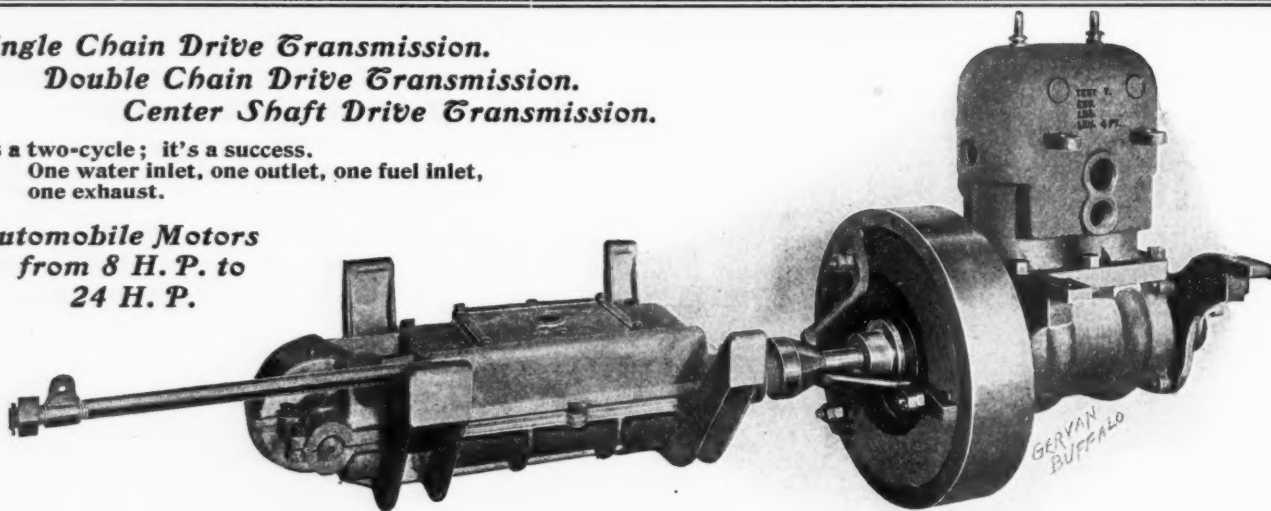
IS SYNONYMOUS WITH

QUALITY in MOTORS

Single Chain Drive Transmission.
Double Chain Drive Transmission.
Center Shaft Drive Transmission.

It's a two-cycle; it's a success.
One water inlet, one outlet, one fuel inlet,
one exhaust.

Automobile Motors
from 8 H. P. to
24 H. P.



Single Chain Drive Transmission and Clutch Coupled to Motor

For Prices and Points of Merit, Address

LACKAWANNA MOTOR CO., 50 Letchworth Street, Buffalo, N. Y.



Phare No. 2 Headlight
List, . . \$25.00 each

**Perfect
In
Every
Detail**

and so stylish and handsomely finished that they dress any machine.

You take no chances of dissatisfied customers when you equip your car with

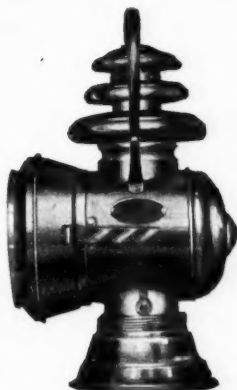
SOLAR MOTOR LAMPS

We make every conceivable style and pattern, both gas and oil, so why experiment with experiments? SOLAR lamps are fully guaranteed and "SOLAR" guarantee means guarantee.

**Badger
Brass
Mfg. Co.**
Kenosha, Wis.

Triple-top
Oil Side Lamp
with Double
Convex Lens

List,
\$20.00 pair



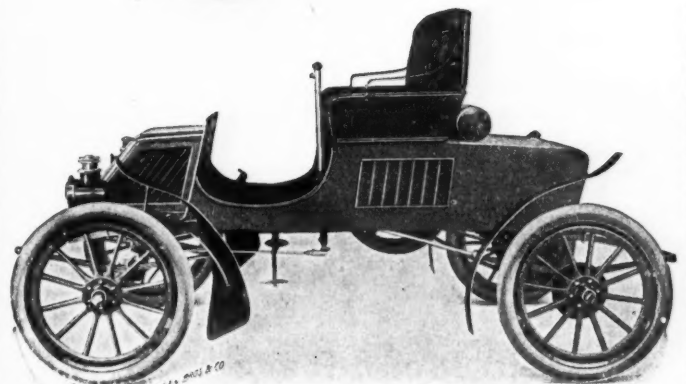
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WELL BALANCED

POWERFUL,
SMOOTH-RUNNING,
SIMPLE, DURABLE
and HANDSOME.

All good desirable qualities in an
Automobile, and all found in the

Rambler



Touring Car

Equipped with a 7 actual horse-power engine, costing less than a cent a mile to run; with wood artillery wheels and three-inch tires, two brakes and a well finished body, it is easily the best value on the market. Let us send you our illustrated booklet "A"; it verifies our statements. Some good unoccupied territory open now that we are up with our orders.

...WE HAVE ONLY ONE PRICE...

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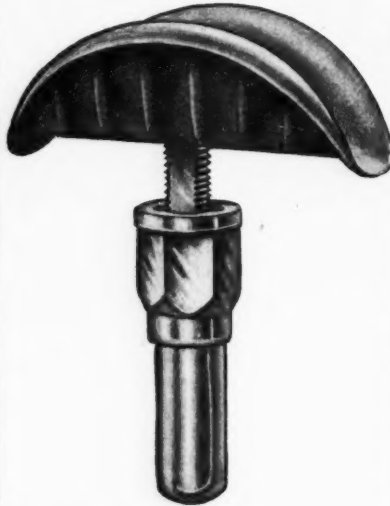
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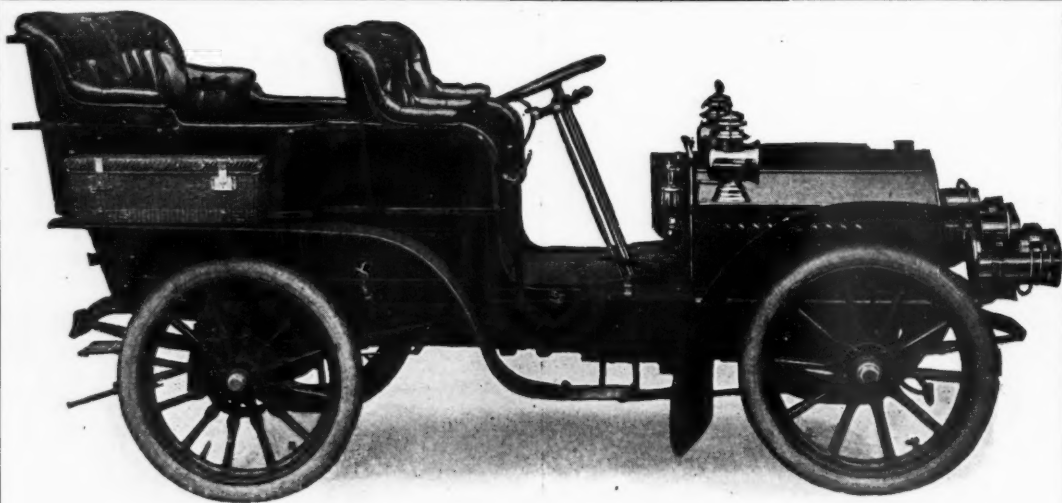
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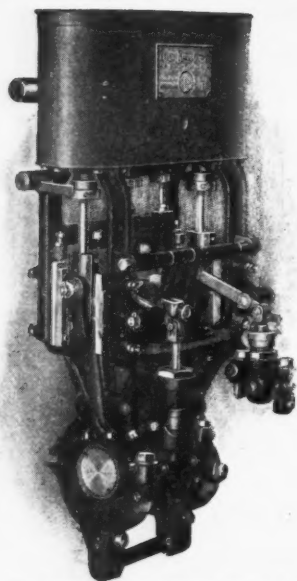
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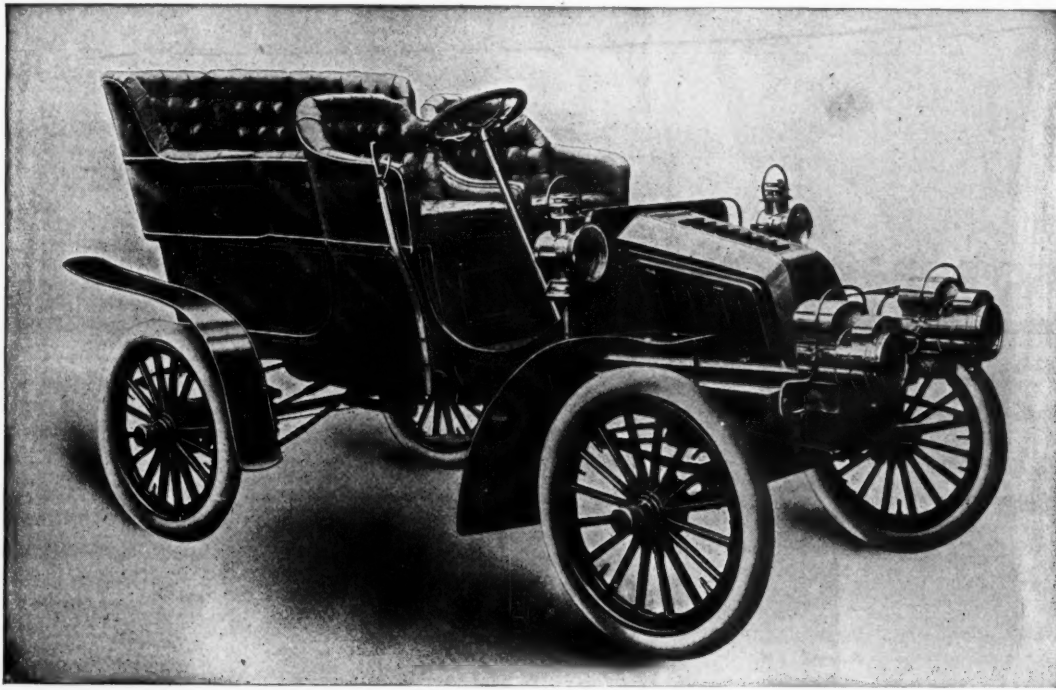
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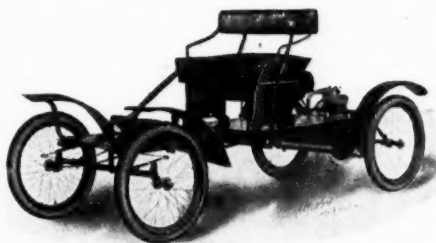
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With Two Speed

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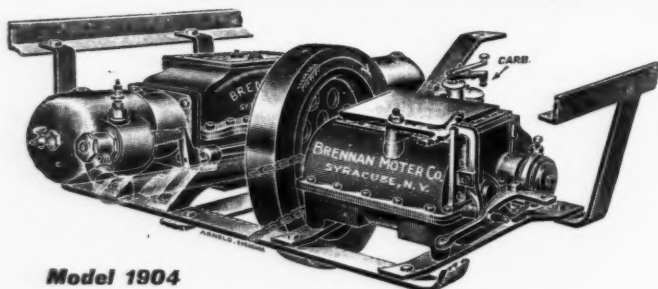
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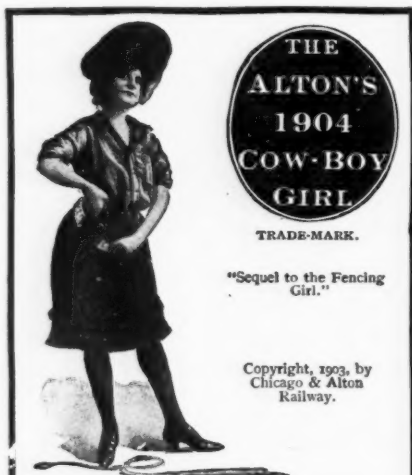
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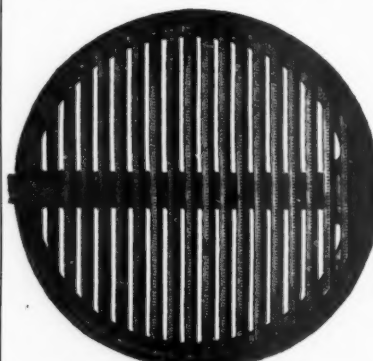
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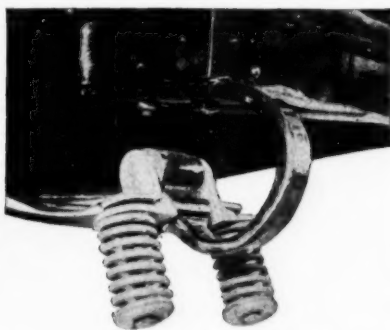
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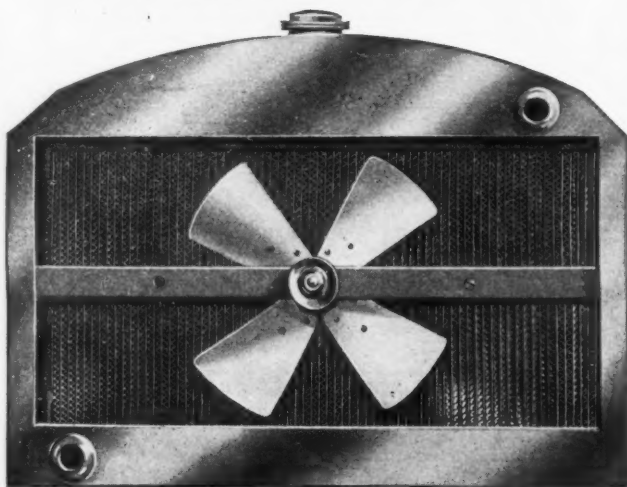
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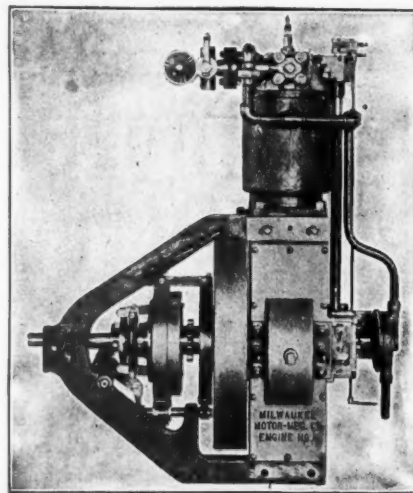
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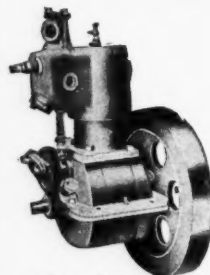


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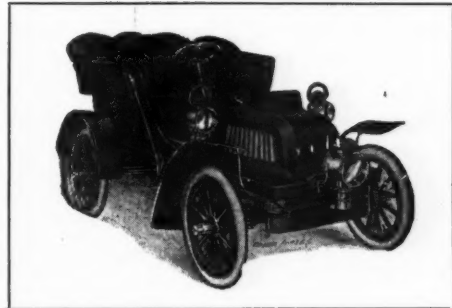
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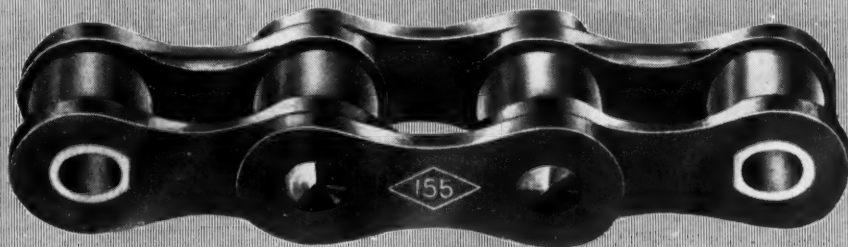
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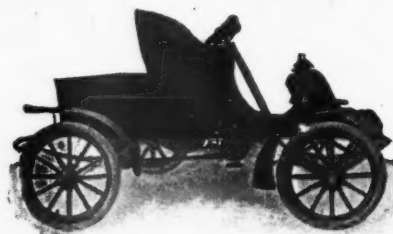
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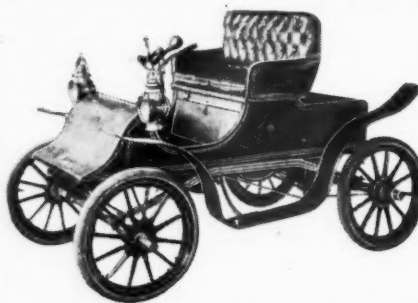
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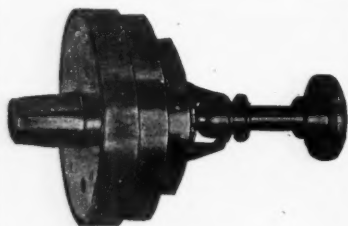
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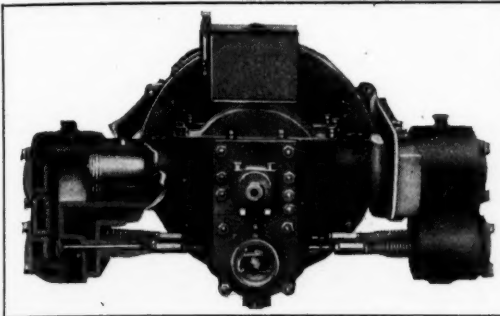
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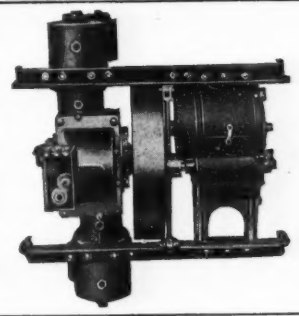
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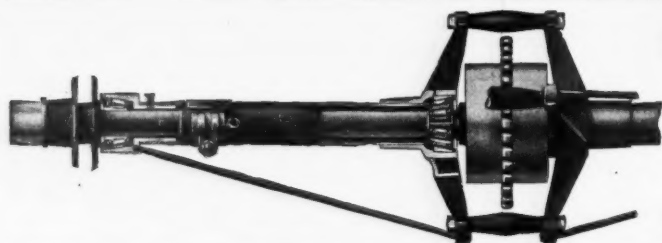
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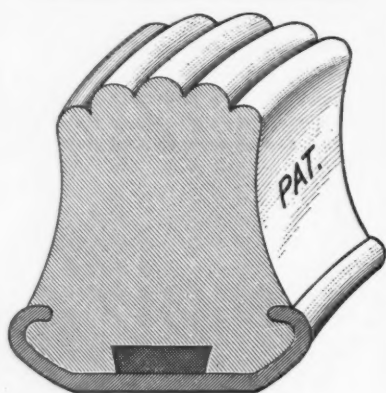
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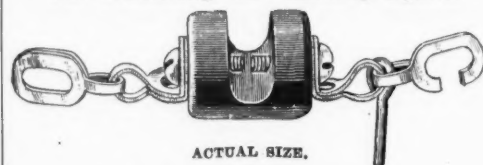
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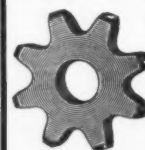
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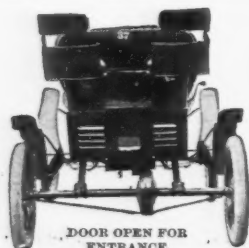
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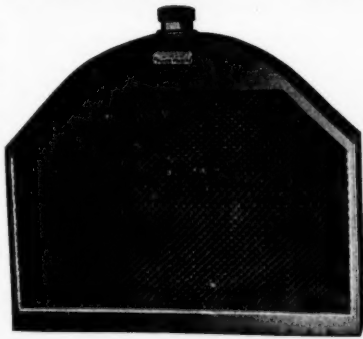
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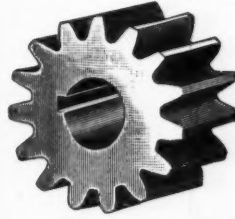
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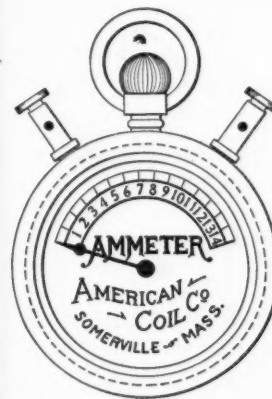


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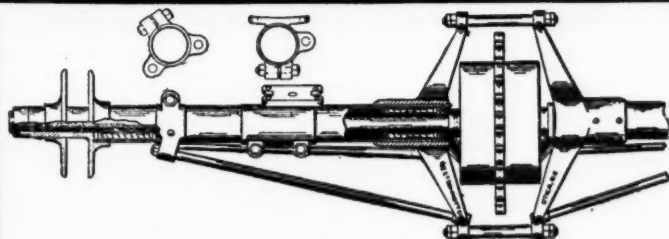


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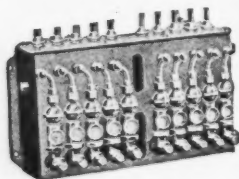
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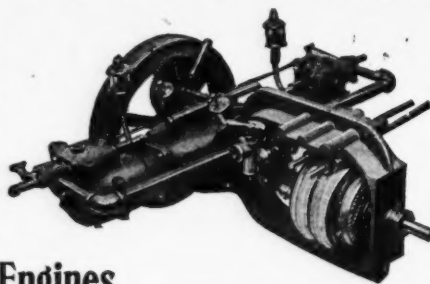
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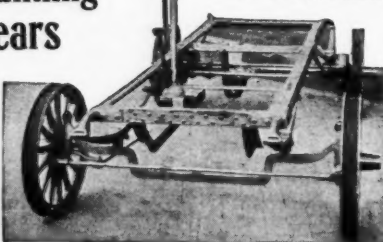
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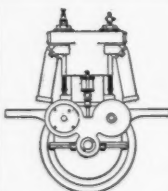
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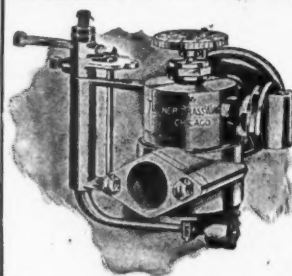
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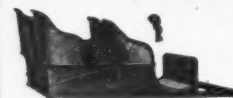
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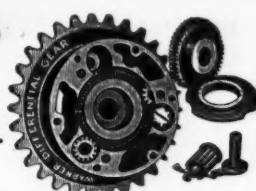
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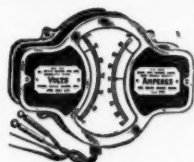
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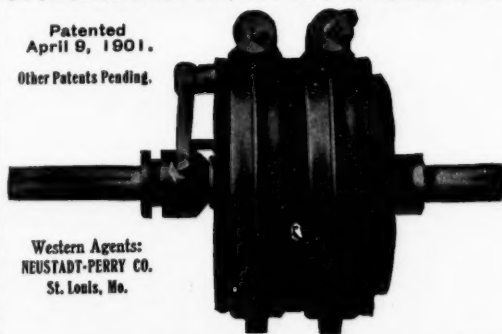
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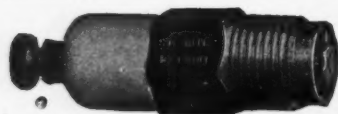
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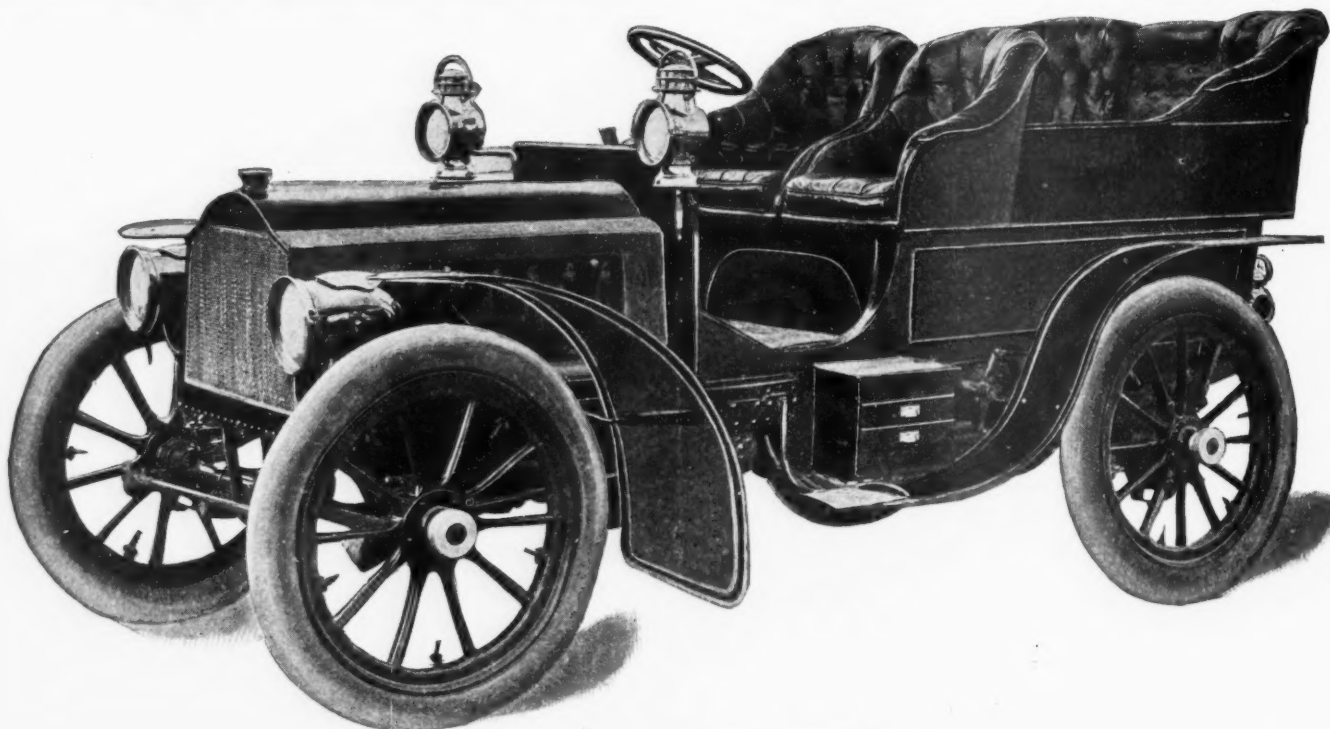
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